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TRAVELS

TO DISCOVER

THE SOURCE OF THE NILE.

TRAVELS

TO DISCOVER

THE SOURCE OF THE NILE,

IN THE YEARS,
1768, 1769, 1770, 1771, 1772, & 1773.

BY

JAMES BRUCE OF KINNAIRD, ESQ.
F. R. S.

THE THIRD EDITION,
CORRECTED AND ENLARGED.

TO WHICH IS PREFIXED,
A LIFE OF THE AUTHOR.

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TRAVELS

TO DISCOVER

THE SOURCE OF THE NILE.

BOOK VII.—CONTINUED.

Register of the Barometer and Thermometer in Abyssinia, 1770.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
JAN.					
1	6½ m.	21 6 4	63¼	N E	A few streaky clouds at the horizon, at S and S W.
	12 n.	21 5 6	72	W S W	Great white clouds throughout the whole air.
	2 e.	21 5 0	72½	ditto	Ditto. Ditto.
	6½ e.	21 5 8	69	W	Clouds near the whole horizon.
2	7 m.	22 4 2	56	N W	Clear.
	12 n.	22 3 0	64¼	ditto	Ditto.
	6 e.	22 2 6	65	N	Ditto.
3	7 m.	22 4 1	56	—	Ditto.
	12 n.	22 2 9	65½	S	Perfectly clear.
	2¾ e.	22 2 0	67¼	N	A violent turn of wind, which lasted six minutes.
	6 e.	22 3 4	65½	N	Clear and calm.
4	6 m.	22 4 0	57	—	Ditto.
	12 n.	22 4 5	51	N W	Ditto.
	2 e.	22 3 1	66	N	Clear, with a good breeze.
	6 e.	22 5 8	60	N	Calm. Misty in the east, flying clouds through the sky.
5	7 m.	22 4 5	56½	N E	Clear and calm.
	12 n.	22 3 2	66¾	N W	A light breeze.
	6 e.	22 3 0	65½	S b E	Clear.
6	7 m.	22 4 6	57	E S E	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		o / //	o		
JAN.					
6	12 n.	22 3 5	66	S	Clear.
	6 e.	22 3 2	66	W	Ditto, and calm.
	7 e.	22 3 6	65	S	Ditto, with a small breeze.
7	6 m.	22 4 6	56	N	Clear.
	12 n.	22 3 2	67	S	Ditto.
	6 e.	22 3 0	64½	N	Ditto.
8	6 m.	22 4 3	55½	N	Misty in the east, and calm.
	12 n.	22 2 9	68½	N E	Clear and a light breeze.
	6 e.	22 2 9	66	N	A few clouds at N. and E. but very thin.
9	7 m.	22 2 4	56	N W	Clear, with a very few thin clouds near the horizon.
	12 n.	22 2 9	65½	S	A small breeze, with thin white clouds throughout the sky.
	6 e.	22 3 2	65	N N E	
10	7 m.	22 4 6	55	N	A few clouds at the horizon at N. E.
	12 n.	22 3 4	67	W S W	Clear.
	6 e.	22 3 2	65	N b W	Calm and clear.
11	7 m.	22 5 2	56	N E	Calm and a little hazy in the east.
	12 n.	22 2 3	66	S W	Clear and a light breeze.
	6 e.	22 3 4	65	N	Light clouds to the south, every where is clear.
12	7 m.	22 4 6	59	N N E	Clear and calm.
	12 n.	22 3 1	67	E S E	Clear, but the wind variable from E. to E. S. E. and S. E.
	6 e.	22 5 3	67	S b E	A brisk wind and clear.
13	7 m.	22 4 5	61	N	Clear weather.
	12 n.	22 3 3	67	S W	Ditto.
	6 e.	22 3 1	65	N E	Ditto.
					The Observations that follow, made while passing the high Mountain of Lamalmon.
FEB.					
7	5 m.	22 5 0	58	N W	Star-light and clear.—We are at Tuguzait, the foot of the Mountain of Lamalmon.
13	5 m.	19 8 8	42	N b E	Hoar cold, clear star-light. We are at the top of the mountain.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
FEB.	...				
13	12 n.	19 7 0	74	N W	Fresh breeze. No dew fell last night on Lamalmon.
	6 e.	19 10 0	56	N	Hazy in the horizon.
14	6 m.	19 10 0	32	W N W	Near calm, hoar frost, never before seen.
	12 n.	19 9 0	78	ditto	A cool breeze, and white flying clouds.
	6 e.	19 9 0	64	N W	A small breeze, perfectly clear, and without clouds.
					GONDAR.
19	6½ m.	21 7 2	61	N	Heavy clouds all over the sky.
	12 n.	21 6 0	76	S E	Ditto.
	2 e.	21 5 6	72	N N E	Ditto.
	6½ e.	21 6 0	73	N E	Ditto.
20	6½ m.	21 6 8	63½	—	Clear.
	12 n.	21 5 9	72	S W	White clouds flying.
	2 e.	21 5 6	72	ditto	Ditto.
	6 e.	21 5 7	71	N W	Little wind, clear.
21	6½ m.	21 6 3	67	S	A few white clouds flying, but seem very light.
	12 n.	21 6 2	71	N W	The whole sky covered with light flying clouds.
	2 e.	21 7 6	72	ditto	White flying clouds, little wind.
	6½ e.	21 6 2	71	ditto	Ditto.
22	6½ m.	21 6 6	67	E	Little wind and clear.
	12 n.	21 6 0	71	W	White flying clouds.
	2 e.	21 6 0	72	N W	Ditto.
	6½ e.	21 6 2	71	ditto	Ditto.
23	6½ m.	21 6 1	68	E	Clear and nearly calm.
	12 n.	21 5 9	72	W	A light breeze, and white flying clouds.
	2 e.	21 5 7	72	N W	Ditto.
	6½ e.	21 5 7	72	ditto	The clouds becoming a little heavier.
24	6½ m.	21 6 2	67	S b W	The sky covered with flying clouds.
	12 n.	21 6 0	72	W	Light white clouds scattered.
	2 e.	21 5 7	72	S W	Little wind, the weather overcast.
	6½ e.	21 5 7	71	N W	Ditto.
25	6½ m.	21 6 0	57	S E	Clear and calm.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
FEB.					
25	12 n.	21 6 8	72	W	Small white light clouds in the S. W.
	2 e.	21 5 8	72	N W	All the sky clear, excepting four small clouds in the south.
	6½ e.	21 5 7	71	ditto.	Ditto.
26	6½ m.	21 5 9	65	S E	Clear and calm.
	12 n.	21 5 9	72	W	White flying clouds in considerable numbers.
	2 e.	21 5 7	72	S W	Light white clouds flying to the E.
	6½ e.	21 5 7	71	W	Weather clear.
27	6½ m.	21 6 1	65	S E	Little wind, clear and cloudless.
	12 n.	21 6 0	72	S S E	Ditto.
	2 e.	21 5 7	72	W b S	A few white clouds flying to the S. W.
	6½ e.	21 5 7	71	N W	Clear.
28	6½ m.	21 6 3	68	E	Ditto.
	12 n.	21 5 9	72	W N W	All the sky is covered with darkish clouds.
	2 e.	21 5 8	73	S	The clouds are still turned heavier and thicker.
	6½ e.	21 5 9	73	S	The clouds are a little broken.
MARCH.					
1	7 m.	21 6 3	68	E	The sky perfectly clear.
	11½ m.	21 6 1	73	S	White heavy clouds, the sun entirely covered. A few big drops of rain,
	2½ e.	21 6 0	73	N E	White clouds which cover the sun.
	6½ e.	21 6 0	71	ditto	Thick clouds at the horizon at north and west.
2	6 m.	21 6 0	68	E b S	Clear and little wind.
	2 e.	21 5 8	72	S W	The whole heavens full of white thick clouds.
	6½ e.	21 5 8	72	N W	A good breeze, and heavy clouds throughout the sky. Lightning at north.
3	5½ m.	21 6 0	69	E S E	Clear and cloudless.
	6½ m.	21 6 0	65	E b N	Ditto.
	12 n.	21 5 8	73	S S W	White flying clouds throughout all the sky.
	2 e.	21 4 9	74	W	The day all overcast, so is the sun.
	6½ e.	21 5 3	73	W	Very cloudless everywhere but at the horizon and S. W.
4	6½ m.	21 6 1	68	S b E	Clear.

Months.	Hours.	Barom. °	′	″	Ther. °	Winds.	Remarks on the Weather.
MARCH							
4	12 n.	21	5	8	73	S W	A quantity of white thick clouds fill all the air.
	2½ e.	21	4	7	82	W	Ditto.
	6½ e.	21	5	4	74	W	Clear.
5	5 m.	21	6	5	63	E	Ditto.
	6½ m.	21	6	4	63	E	Ditto.
	12 n.	21	5	1	82	S b W	All the air is full of white flying clouds, the sun appears faintly.
	2 e.	21	5	0	78	W	Many clouds. The sun is hid only a little at west. Clear.
	6½ e.	21	5	4	71	S	Many clouds throughout the whole sky.
6	6½ m.	21	6	3	62	E	Calm and clear.
	12 n.	21	5	2	80	S	Clouds fill the whole air.
	2 e.	21	4	8	78	S	Overcast, with thick clouds and thunder.
	2¼ e.	21	5	2	73	S E	Clouds cover the whole air, and the sun hid.
	6½ e.	21	5	2	69	S W	Small rain.
7	6½ m.	21	6	9	60	E b S	Overcast with clouds, all but at north.
	12 n.	21	5	7	78	W	White clouds through the whole sky, the sun not seen.
	2 e.	21	5	3	78	W	Ditto.
	6½ e.	21	5	8	72	N	A few clouds and high, but clear in the horizon.
8	6½ m.	21	7	3	59	S	The sky is clear, with very white thin clouds.
	12 n.	21	6	0	79	S S W	Great white flying clouds.
	2 e.	21	5	6	79	N W	Ditto.
	6½ e.	21	5	6	73	W N W	Clear and cloudless.
9	6½ m.	21	6	4	61	ditto	Perfectly clear and cloudless.
	12 n.	21	5	6	81	S S E	Large white clouds flying all through the air.
	2 e.	21	5	3	80	N W	Ditto.
	6½ e.	21	5	3	73	ditto	Ditto.
10	5 m.	21	6	3	61½	W	Clear.
	6 m.	21	6	3	60	W	Small white clouds flying to the S.
	12 n.	21	1	5	80	W	The white clouds are become much larger.
	2 e.	21	5	1	80	W	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
MARCH					
10	6 e.	21 5 0	75	N W	Light clouds throughout the air, but heavy at N. W.
11	6 m.	21 5 7	68	N	Ditto.
	11½ m.	21 6 2	62	N	Very clear.
	12 n.	21. 6 4	79	N W	All the air is covered with very thin clouds, but large white clouds in the horizon to the S,
	2 e.	21 5 0	80	W	White clouds flying throughout the sky.
	6 e.	21 5 2	74	W N W	Clear small clouds at the horizon in the north.
12	6 m.	21 6 2	65	N E	The sky is covered with thin clouds like a veil.
	12 n.	21 5 3	79	N W	A few light flying clouds throughout the sky.
	2 e.	21 5 0	80	W	Ditto.
	6 e.	21 5 4	73	N W	Clear and cloudless.
13	6 m.	21 6 7	60	W	Clear and calm.
	12 n.	21 5 0	81	N W	Clear, only a few light clouds to the south-east.
	6 e.	21 5 5	74	ditto	Clear, and a few small clouds near the horizon.
14	6 m.	21 6 6	63	N E	Clear and cloudless.
	12 n.	21 5 0	79	W	Large flying clouds, the sun is covered.
	2 e.	21 5 0	79	S	The whole sky is covered with heavy clouds, only a small part of the horizon clear at north, a small shower of rain for a few minutes.
	6 e.	21 5 6	72	S	Flying clouds throughout the air.
16	6 m.	21 6 5	62	S S E	A few clouds at E. the rest clear.
	12 n.	21 5 4	80	W	Flying clouds throughout the air, a sudden violent wind from the west, which lasted 5 min.
	6 e.	21 5 5	72	N W	Clear.
	7½ e.	21 6 0	70	W	Clear and cloudless.
17	6 m.	21 6 5	63	S E	Clear.
	12 n.	21 5 2	80	S W	Flying clouds throughout the air.

N. B. Thermometer exposed to the sun, and in half a minute mounted to 106°.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
MARCH	..	° ′ ″	°		
17	2 e.	21 4 9	80	W'b S	Flying clouds throughout the air.—Thermometer exposed to the sun, in half a minute mounted to 110°.
	6 e.	21 5 2	72	W	Clear, only a few clouds to the W.
18	4 m.	21 6 4	60	S	Calm and hazy.
	6 m.	21 6 8	58	S	Calm, all the air covered with thin clouds like a veil.—Thermometer exposed to the sun, mounted to 100°.
	2 e.	21 5 0	81	W	A few light clouds in the east.—Thermometer exposed to the sun, mounted to 107°.
	6 e.	21 5 5	72	W	Clear.
19	6 m.	21 6 8	58	W N W	Ditto.
	12 n.	21 5 5	80	S	Ditto.—Thermometer exposed to the sun, 105°.
	2 e.	21 5 0	81	N W	Ditto.—Thermometer exposed to the sun, 113.
	6 e.	21 5 6	73	W N W	Ditto.
20	6 m.	21 6 8	62	E	Ditto.
	12 n.	21 5 6	79	W	Large heavy clouds to the south and to the east, the sun hid.—Thermometer exposed to the sun, 105°.
	2 e.	21 5 0	80	N W	Ditto, ditto, in half a minute mounted to 101°.
	6 e.	21 5 6	73	ditto	Heavy clouds to the E. and W.
21	6 m.	21 6 7	62	E	Clear and cloudless.
	12 n.	21 5 3	80	N W	Thin clouds like a veil cover the sky.—Thermometer exposed to the sun, 106°.
	2 e.	21 4 9	80	W	Clear, only a few thin clouds to the north.—In half a minute the thermometer, exposed to the sun, mounted to 106°.
	6 e.	21 5 0	74	N	All the air is covered with thin clouds like a veil.
					EQUINOX.
22	6 m.	21 6 7	62	F	Clear.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
MARCH							
22	1 e.	21	5	2	81	W b N	A few light clouds flying in the south.—Thermometer, in half a minute, rose to 110°.
	2 e.	21	4	7	81	N N E	Clear.—Thermometer, in half a minute, rose to 111°.
	6 e.	21	5	0	74	N N W	A few streaky clouds like a veil to the eastward.
23	6 m.	21	6	4	62	E	Clear and cloudless.
	12 n.	21	5	3	81	W b N	Large white clouds, the sun covered.—Thermometer 88°.
	2 e.	21	4	6	85	S S W	All the sky is covered with white heavy clouds.—Thermometer, exposed to the sun, rose to 106°.
	6 e.	21	5	3	75	S	Ditto.
24	12 n.	21	4	7	83	W	Heavy clouds throughout the air, the sun covered.
	2 e.	21	4	6	81	W N W	Ditto - ditto.
	6 e.	21	5	3	73	N W	Clouds at the W. and N. W. towards the horizon.
25	6 m.	21	6	3	63	W	Clouds to W. and N. W. towards the horizon.
	12 n.	21	4	7	81	W N W	White flying clouds throughout all the air.
	2 e.	21	3	4	81	W	Short claps of thunder, with a small shower of rain for a few minutes at different times.
	6 e.	21	5	2	68	W	Heavy clouds, with a violent wind.
26	4 m.	21	6	0	63	W	Clouds and lightning, very pale towards the south.
	6 m.	21	6	3	63	W	All the sky covered with clouds.
	1¼ e.	21	5	2	77	S	Violent showers of hail, without any mixture of rain, for 15′, the hail as big as a middling cherry. Thunder, but not loud, and of short duration.
	3¼ e.	21	5	5	72	S	Hail and rain, mixed in showers, with short intervals, that may have lasted an hour.
27	6 m.	21	6	3	56	W	Clear.
	12 n.	21	6	1	76	S	Flying clouds all throughout the air.
	2 e.	21	5	5	77	W N W	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
MARCH		° ′ ″	°		
27	6 e.	21 5 8	70	N W	Violent wind in blasts, which lasted for 5 or 6′ at a time. All the sky is covered with large heavy clouds, especially at N.; thunder, with violent blasts of wind alternately every 8′.
28	6 m.	21 6 6	58	E	Clear till ten o'clock, and the sky obscured with white clouds.
	12 n.	21 4 6	81	W	Large clouds cover the sky, going violently to the S. W.
	2½ e.	21 4 4	83	S b E	Large clouds and the sun covered.
	6 e.	21 5 7	71	S	Small clouds to the eastward.
29	6 m.	21 6 7	59	E	Clear till nine, when the sky is covered with white clouds.
	12 n.	21 5 2	80	N	Clouds through all the sky, and the sun covered.
	2 e.	21 4 8	80	W	All the air is full of small white clouds.
30	6 m.	21 6 4	63	E	Clear.
	12 n.	21 5 3	80	W	Small white clouds flying throughout the air
	2 e.	21 4 8	80	W	Wind varying to north.
	6 e.	21 5 2	72	W	Clouds towards the horizon.
31	6 m.	21 6 1	61	W	A few clouds in the S. towards the horizon.
	12 n.	21 4 6	83	W	White flying clouds scattered thro' all the air.—Thermometer exposed to the sun, in half a minute rose to 101°.
	2 e.	21 5 0	32	N W	Clouds as above, but thinner and smaller.—Thermometer, exposed to the sun, in half a minute rose to 113°.
APRIL	6 e.	21 5 0	73	W	Clear.
1	6 m.	21 6 0	59	S b E	Perfectly clear and cloudless.
	12 n.	21 4 0	84	S W	All the air covered with white flying clouds.
	2 e.	21 3 8	84	W	Ditto.
	6 e.	21 4 8	75	W	Frequent clouds throughout the air, which come from the east against the wind.
2	6 m.	21 6 2	64	W b S	Clouds throughout the air.
	12 n.	21 4 6	85	S E	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
APRIL					
2	2 e.	21 4 6	80	W	Clouds throughout the air, the sun is covered.
	6 e.	21 4 9	75	N b E	A few flying clouds.
3	6 m.	21 6 4	63	E b S	Clear and cloudless.
	12 n.	21 5 1	82½	S E	A few flying clouds, especially in the west and north.
	3 e.	21 4 7	82	E	Ditto.
	6 e.	21 5 3	75	S E	Ditto.
8	6½ m.	22 2 0	72	——	A few clouds through all the air.
	10⅛ m.	22 0 0	74½	S W	Rain, the drops large and distant, that lasted a quarter of an hour.
	12 n.	21 11 8	75½	N W	Thunder, and very thick clouds at north-west, sudden blasts of wind, which lasted with intervals, about a quarter of an hour at a time.
	2 e.	21 11 4	74	ditto	The clouds a little lighter, but the wind still strong, with intervals.
	6 e.	21 11 2	76	ditto	Thunder at the E. S. E. the clouds are very thick at E. and N. W.
	6¾ e.	——	—	N N E	The wind blows like a tempest, with lightning at E. and N. black clouds at N. W. and N.
	7 e.	21 11 5	74½	N E	There begins a small shower, then comes thunder; the rain increases, with a strong wind for two hours.
9	6 m.	22 0 0	72	——	Clouds all through the air, especially at N. W. and S. W.
	12 n.	21 11 6	76	N W	Great heavy clouds all over the horizon, especially at N. W.
	2 e.	21 11 3	77½	W	Ditto.
	6 e.	21 11 2	77½	N W	Heavy clouds at N. W. and thunder for half an hour.
10	6 m.	21 11 8	70	——	Clear.
	2 e.	21 11 4	78	N	Small clouds in the horizon at N. W.
	6 e.	21 11 2	76	W	Clear.
11	6 m.	22 0 0	68	——	Ditto, and cloudless.
	12 n.	21 11 5	76	N W	All the air is covered with a light veil.
	2 e.	21 11 3	76½	ditto	Ditto.

Months.	Hours.	Barom. ° ′ ″	Ther. °	Winds.	Remarks on the Weather.
APRIL	...				
11	6 e.	21 11 4	74½	N	All the air is covered with a light veil.
12	6 m.	22 0 0	67	——	Ditto.
	12 n.	21 11 6	75½	N	A few clouds towards the horizon.
	2 e.	21 11 4	77	N W	White clouds all flying over the air.
	6 e.	21 11 2	71	——	Clouds towards the horizon at W. and S. W.
13	6 m.	21 11 8	68	——	Clear.
	12 n.	21 11 5	75½	W	Clouds towards the horizon at N.
	2 e.	21 11 4	76	W	Small clouds at east.
	6 e.	21 11 3	74	N W	A thin veil has covered the heavens.
14	6 m.	22 0 2	68½	N E	A light veil over the sky.
	12 n.	21 11 8	76½	W N W	White clouds in the east.
	2 e.	21 11 5	76	N W	Ditto, lighter in the south.
	6 e.	21 11 5	76	N	A veil of white clouds cover the whole air.
15	2 m.	21 11 6	66	N N E	Clear and cloudless.
	7½ m.	22 3 0	69	ditto	White clouds like a veil flying through the air.
	12 n.	21 11 7	76½	N W	Clouds as above, but more united.
	2 e.	21 11 4	79	ditto	Clouds at N. W. clear at S. E.
	3 e.	21 11 4	80	W	Ditto.
	6 e.	21 11 4	76½	N	Clear.
16	7 m.	22 0 0	70	N E	Ditto.
	12 n.	21 11 8	77½	N W	White light clouds at N. N. W. and N. E. all the rest clear.
	2 e.	21 11 5	77½	W	White flying clouds through all the air, the sun is covered.
	6 e.	21 11 4	78	W	Heavy clouds all over the air, but clear at west.
17	6 m.	22 0 0	73	N	Clear.
	1¼ e.	21 11 7	76½	N W	Flying clouds throughout the air.
	2 e.	21 11 5	79	ditto	Ditto, a small part clear towards the zenith at south-east.
	4¾ e.	21 11 4	79¼	ditto	Flying clouds throughout the air, especially at N.N.W. and N.E.
	6 e.	21 11 3	76	ditto	Heavy clouds throughout the air.
18	1 m.	21 11 8	75½	E b S	Heavy rain for 10′, thunder in the north, and lightning in the north and south.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
APRIL					
18	12 n.	22 0 1	75	N W	Large white clouds scattered throughout the sky.
	2 e.	21 11 8	77	ditto	Clouds as above, but very heavy to the eastward.
	3¼ e.	21 11 5	77	ditto	Heavy thick clouds at the north, lighter at east and west, the south clear towards the zenith, but heavy clouds in the horizon, the wind very violent.
	6 e.	21 11 5	76	N N W	Clouds through all the air, and great appearance of rain.
19	6 m.	22 0 6	64	N	At seven o'clock there was at the S. S. E. a small white cloud, from which came a great quantity of lightning, thunder thro' the night, but no rain.
	12 n.	———	91	W N W	
	2 e.	21 11 3	78	N W	Small flying clouds thro' the air.
	6 e.	21 11 1	77	ditto	Clear.
20	6 m.	22 0 5	64½	N	Clear and cloudless.
	12 n.	21 11 9	77½	N W	The sky covered with a very light veil.
	3 e.	21 11 3	78	W	Small flying clouds.
	6 e.	21 11 3	77	N E	Clear, at four o'clock, the wind changed to east.
	8 e.	21 11 3	77	E N E	Clear and cloudless.
21	6 m.	21 0 0	65	S E	Ditto.
	12 n.	22 0 2	77	N W	Ditto.
	1 e.	21 11 6	79	W	Clear, only three small clouds near the zenith.
	6 e.	21 11 3	78	S E	Calm and a few very light clouds.
	8¼ e.	21 11 7	75	E	Clear for three nights past.
22	6 m.	22 0 7	63	N E	All the air is covered with thin clouds like a veil.
	12 n.	22 0 0	77½	W	Clear.
	1 e.	21 11 6	79	W	Ditto.
	2 e.	21 11 3	79	W N W	Ditto.
	3 e.	21 11 2	79	W	Ditto.
	4 e.	21 11 1	80	W	Ditto.
	5 e.	21 11 0	80	W	Ditto.
	6 e.	21 11 1	78	N W	Clouds all over the horizon, especially at W. and N. W.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
APRIL		″ ‴			
22	7 e.	21 11 5	76	N E	Great clouds towards the horizon, and black at N. W.
	8 e.	21 11 6	75	N	Ditto.
	9 e.	21 11 6	74	N E	Clear and cloudless.
	10 e.	22 0 0	74	S E	Ditto.
	11 e.	22 0 0	73	E N E	Ditto.
	12 e.	22 0 0	73	N E	Ditto.
23	1 m.	22 0 0	70	E S E	Small light clouds in the east.
	2 m.	22 0 0	66	S E	Clear.
	3 m.	22 0 0	68	E	Ditto.
	4 m.	22 0 1	66	S E	Ditto.
	5 m.	22 0 2	65	E N E	Ditto.
	6 m.	22 0 2	66	ditto	Ditto.
	7 m.	22 0 3	70	E S E	Clear and cloudless.
	8 m.	21 11 9	79	ditto	Ditto.
	9 m.	22 0 2	76	W N W	Ditto.
	10 m.	22 0 2	77	N W	Ditto.
	11 m.	22 0 0	78	ditto	Ditto.
	12 n.	21 11 6	79	W	Ditto.
	2 e.	21 11 0	82	N E	Clear, only a few clouds at the north-west.
	6 e.	21 11 2	77	ditto	Clouds all throughout the horizon, except at north-west.
24	6 m.	22 0 2	65	S E	Clear.
	12 n.	21 11 7	79	S W	A few clouds to the N. and E.
	2 e.	21 11 2	81	W	Ditto.
	6½ e.	21 11 2	78	N	Clouds all over the horizon, and a veil all over the sky.
25	6 m.	22 0 0	64	E S E	Clear.
	2½ e.	21 11 0	82	W	Clouds throughout the air, but clear at south-west.
	6½ e.	21 11 0	79	N	Flying clouds throughout all the horizon.
26	6 m.	22 0 1	64	S E	Clear.
	12 n.	21 11 6	79¼	W N W	Flying clouds all over the sky, especially at north west.
	2 e.	21 11 2	79	ditto	All the air covered, the sun likewise covered.
	6½ e.	21 11 2	78	N	Flying clouds all over the sky, especially at north-west.
27	12½ m.	22 0 2	66	N	Clear.
	6 m.	22 0 4	63	N E	Small clouds through the horizon.
	12 n.	21 11 10	78	W N W	White clouds in the N. and E.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
APRIL					
27	2 e.	21 11 3	80	N W	White clouds in the N. and E.
	6½ e.	21 11 5	77	ditto	All the sky is covered with heavy clouds, which go against the wind, that is to the north-west, a few drops of rain fall.
28	6 m.	22 0 6	65	E	Clouds in the horizon, and a thin veil covering all the sky at N. E. and S. up to the zenith.
	12 n.	22 0 2	78	N W	White and hoary clouds flying all over the sky.
	2 e.	21 11 7	80	N	Large flying clouds.
	6½ e.	21 11 10	77½	N b E	Flying clouds throughout all the air, they go towards the west, a violent wind about midnight from the east.
29	5½ m.	22 0 6	67	E N E	Clear.
	6½ m.	22 11 9	69	S	Mostly clear, with some part of the heavens covered with a thin veil.
	12 n.	22 0 3	79	E	Light clouds flying in the sky.
	2 e.	22 0 0	80	N E	Strong blasts of wind from time to time.
	6½ e.	21 11 9	78	N b W	Clouds throughout the horizon.
30	6 m.	22 0 7	65	E	Clouds flying to the N. and E.
	12 n.	22 0 0	81	N W	Large white clouds all over the horizon, especially at N. E.
	2 e.	21 11 5	81	W N W	Ditto.
	6½ e.	21 11 6	81⅓	ditto	Large white clouds all over the horizon.
MAY 1	1 m.	22 0 3	68	E	Flying clouds much united all over the sky, the east is the part that is freest.
	6 m.	21 0 4	65	N E	Heavy clouds towards the north, the rest clear.
	12 n.	21 11 5	80¼	N W	Flying clouds at N. and N. E.
	2 e.	21 11 1	81¼	ditto	Clouds as above, and also at the horizon.
	6¼ e.	21 11 3	78	E N E	Thick clouds over the horizon, and the sky almost covered as with a veil.
	8½ e.	21 11 7	77	W	Rain, thunder, and lightning, but in no great quantity, all the sky is covered excepting at S. E.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
MAY		° ′ ″	°		
2	6 m.	22 0 5	65½	S E	All the air is covered with thick clouds, a few drops of rain; at half past six a very light rain began, which lasted for a few minutes, and begins again.
	7½ m	22 0 8	67	ditto	It has begun a light shower, which ceases, and begins again at intervals.
	2 e.	21 11 7	77	N N W	Large clouds throughout the air, the sun covered.
	6½ e.	21 11 9	75	ditto	Ditto.
3	12 n.	22 0 1	77½	N W	Large moving clouds, the sun is covered.
	2 e.	21 11 3	80	N E	Ditto.
	6½ e.	21 11 5	76¼	N	Clouds everywhere joined, and cover the whole air.
4	6½ m.	22 0 7	64½	E	Light flying clouds.
	12 n.	21 11 9	76	N W	Small white flying clouds.
	2 e.	21 11 3	80	N N E	Small white clouds in the horizon.
	6½ e.	21 11 4	77½	N W	Clouds throughout the air, they come from south-east, and go against the wind.
5	6 m.	22 0 4	71	N b E	Small light clouds throughout the horizon.
	12 n.	22 0 0	80	N N E	Clouds at east.
	2 e.	21 11 3	81	ditto	Heavy moving clouds throughout the air.
	6½ e.	21 11 4	77¼	N N W	United clouds through the air, appearance of rain.
6	6 m.	22 0 8	66½	N E	Great clouds which cover all the air.
	12 n.	21 11 8	80	N W	Ditto.
	4½ e.	22 0 0	76½	S E	All the air covered with white clouds, it begins to rain.
	5¾ e.	22 0 6	71¼	ditto	Ditto, ditto, it begins to thunder.
	6½ e.	22 0 7	71	——	A light shower, which ceases in a few minutes.
7	6 m.	22 0 8	60	——	Clouds at the horizon, especially at east and north.
	12 n.	21 0 2	75½	N W	Great white flying clouds, nothing clear but the zenith.
	2 e.	21 11 5	77½	N	Clouds cover the whole air.

Mon'h.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
MAY					
7.	6¼ e.	21 11 6	72½	N	It has begun to rain a little, all the air is covered with heavy clouds.
	6½ e.	21 11 7	72¾	N	The rain has ceased, clouds throughout the air.
8	6 m.	22 0 0	65½	——	Clouds throughout the whole air.
	12 n.	21 11 6	74	N W	Ditto.
	2 e.	21 11 3	76	ditto	All the air is covered with clouds.
	6 e.	21 11 6	74	N E	Ditto.
	7¼ e.	22 0 1	73	S S E	Clouds as above, it begins to rain lightly at eight.
9	6 m.	22 0 6	74	N E	Ditto.
	12 n.	22 0 0	73	N W	White clouds at the horizon at north and east, a light veil covers the sky.
	2 e.	21 11 5	75	ditto	Thunder in short claps.
	6½ e.	21 11 7	73¾	N	Flying clouds throughout the air.
10	6¼ m.	22 0 6	62½	N E	Light clouds throughout the whole air.
	12 n.	22 0 0	75¼	N W	Large clouds flying throughout the air, especially at north and east, thunder.
	2 e.	21 11 3	75	ditto	Flying clouds throughout the air; the sun is covered, a small shower which lasted for a few minutes.
	6¼ e.	21 11 6	72½	E S E	Thick clouds throughout all the air.
11	6¼ m.	22 0 6	62	E b S	White light clouds throughout the air, dark towards the horizon, especially in the east.
	12 n.	22 0 7	73¼	N W	Great masses of white clouds, with clear intervals.
	2 e.	21 11 5	75½	W	Thick clouds in every part, the zenith only clear.
	3¾ e.	22 0 0	74¾	E	Violent rain, with clouds, thunder and lightning.
	6¼ e.	22 0 0	67½	N	It rains a little, all the heavens covered, but darkest at north-west and south-east.
12	6¼ m.	22 0 4	60½	S E	Clear and cloudless.
	12 n.	22 0 0	73	S b E	Great masses of white clouds throughout the horizon, zenith clear.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
MAY					
12	2 ′c.	22 0 3	74½	N E	Great masses of white clouds throughout the horizon, zenith clear.
	6 e.	22 0 3	71½	E	The sky covered with black clouds, it begins to rain smartly.
	6¾ e.	22 0 8	69½	N E	Black clouds, and rains violently, but without thunder.
13	6¼ m.	22 0 3	64½	ditto	A light veil covers the sun, which does not hinder it from being warm.
	12 n.	21 11 6	74¼	W	Flying clouds throughout the air.
	2 e.	21 11 1	76	N W	Ditto.
	6½ e.	21 11 2	74	N E	Ditto.
14	6 m.	22 0 4	66½	ditto	All the air is covered with thick clouds, which threaten rain.
	12 n.	21 11 4	74	N N E	Ditto.
	2¾ e	21 11 0	75	N E	Scattered clouds throughout the air.
	4¼ e.	21 10 5	77	N N W	Flying showers for ten minutes, the sun clear.
	6¼ e.	21 10 9	73¼	N E	Thick black clouds, thunder at south-east and violent lightning.
15	4¼ m.	22 0 1	62½	S E	A large thick cloud at west, all the rest clear.
	6 m.	22 0 2	61½	ditto	Ditto.
	12 n.	21 11 6	75	N W	Great clouds flying to north and east, zenith clear.
	2 e.	21 11 0	76½	ditto	White clouds towards the horizon, zenith clear
	6½ e.	21 11 2	71¼	N E.	One single cloud covers the whole sky equally.
16	5¼ m.	22 0 0	60½	ditto	Clear, only a very few white cloud at the horizon.
	6¼ m.	22 0 2	61	ditto	Clear, only a few white clouds at west.
	12 n.	21 11 6	76½	S S E varying, to S W	Large clouds at N. N. W. all the heavens covered as with a veil, wind changing to N. N. W.
	2 e	21 11 2	77	N	A great cloud covers the zenith.
	6½ e.	21 11 1	73½	E. N E.	Dotted clouds cover the whole air.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
MAY 17	6 m.	22 0 4	62	ditto	Clear.
	12 n.	21 11 7	74	W N W	Thick clouds to the north-west, and thunder from the same quarter, and the other part of the sky, clouds flying against the wind.
	2 e.	21 11 4	74½	N E	All the sky is covered with clouds, it threatens rain.
	6½ e.	21 11 6	70¼	N N W	All the sky is covered with black clouds, it lightens also, and threatens rain.
JUNE 1	6 m.	21 6 5	63	W	The west is all full of heavy clouds, which reaches from the horizon to the zenith.
	12. n.	21 3 6	69	N	It begins to rain heavily, and large drops.
	2 e.	21 3 1	68	N N W	All the air covered with thick clouds, especially at the south and west.
	6½ e.	21 3 8	65	N	Between this and the last observation, three or four small showers, and the whole sky covered with thick clouds.
2	6 m.	21 5 8	63½	N	Flying clouds through the whole air, especially at north and north-west.
	12 n.	21 4 2	67½	N	Flying clouds through the air.
	2 e.	21 3 8	68½	N N E	Ditto; all this afternoon have fallen small showers, which lasted for five or six minutes at a time.
	6½ e.	21 4 0	67½	N	The sky at present is all clouded.
3	6 m.	21 5 8	62	S W	All the air is covered with thick clouds at the E. and N E. the air a little thinner.
	12 n.	21 4 4	68	N N E	All the air covered as above with thick clouds, and the sun not seen.
	2 e.	21 4 0	67½	N	Scattered clouds through all the sky.
	6½ e.	21 4 8	66	N N E	Black clouds at N. and W. the S. perfectly clear.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
JUNE		° ′ ″	°		
4	6 m.	21 5 8	62	N	Clouds united all over the heavens, it rained a little in the morning.
	12 n.	21 4 8	67⅓	N N E	The south covered with a thick cloud, the rest of the heavens covered with flying clouds, but pretty heavy; at half-past 12 it rained violently.
	2 e.	21 4 0	67	N	The south covered with very thick clouds, with some thunder.
	6½ e.	21 4 0	67⅓	N N E	Thick clouds at north and west, the rest of the heavens clear.
5	6 m.	21 5 7	61	N	Clear.
	12 n.	21 4 3	67½	N N E	There has fallen a little rain for about ten minutes.
	2 e.	21 4 0	68⅓	N	Thick clouds, but the sun appears.
	7 e.	21 4 0	67½	N	Clouds in the horizon to north and west, very small clouds in the rest of the air.
10	12 m.	21 5 0	66	N N E	Cloudy, all the heavens are perfectly covered.
	6½ e.	21 4 6	66⅓	S	Very heavy clouds cover the whole air, coming first from the south; it rains very violently.
11	6 m.	21 5 0	65⅓	——	Flying clouds through the whole air, especially at the horizon.
	2 e.	21 4 6	66	N N E	Heavy clouds through the whole air, it has rained very heavily two or three times.
	6½ e.	21 4 6	66	ditto	Ditto.
12	6 m.	21 5 2	64⅓	——	Scattered clouds throughout the air, especially to the S.
	12 n.	21 5 1	65⅔	S E	All the air is covered with heavy thick clouds, and it begins to rain with great violence.
	12½ e.	21 5 2	64	N W	It has continued to rain every half minute, to six o'clock, with violent claps of thunder.
	6½ e.	21 4 9	65	N N E	It still continues to rain moderately for three hours in the night.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
JUNE					
13	6 m.	21 5 2	61 1/8	——	Clouds in the horizon at S. and E.
	12 n.	21 4 9	66	N W	All the air is covered with thick clouds.
	2 e.	21 4 6	66	N N E	Ditto, but the sun appears.
	4 e.	21 4 1	66	S E varying to S W	The south is covered with thick black clouds, it has rained several times between four and five.
	6 1/2 e.	21 4 6	64 1/8	S E	Small rain for about an hour, clouds flying through the air very heavy in the horizon to the S.
14	6 m.	21 4 9	65	——	Heavy clouds from the south-east to the west.
	6 1/2 e.	21 4 3	65	N N E	Black clouds to the south and west.
15	6 m.	21 4 9	64 1/2	——	Clouds in the south and in the east, towards the horizon.
	12 n.	21 4 7	65 1/8	ditto	Clouds throughout the whole air, it thunders with long intervals.
	2 e.	21 4 4	66	ditto	Ditto; and great appearances of rain, it lightens at south.
	6 1/2 e.	21 4 1	66	N E	Thick clouds to the south, thinner through the rest of the air.
16	6 m.	21 4 9	64	——	Dark mist on every side, which lasted only half an hour.
	12 n.	21 4 5	65 1/8	N N E	Heavy clouds throughout the air, especially to the S.
	2 e.	21 4 5	66 1/2	N	Clouds throughout the air, it has rained for three times violently, but of short duration.
	6 1/2 e.	21 4 2	66	N E	Black clouds throughout the air, with violent lightning.
17	7 m.	21 4 6	65	——	Flying clouds throughout the air, especially in the E.
18	7 m.	21 4 8	63 1/8	N E	Light clouds, but closely united all over the sky like a veil, and something blacker to the S. S. W.
	12 n.	21 4 4	66	ditto	Black clouds throughout the air,

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
JUNE		° ′ ″	°		
					a violent rain has fallen for a quarter of an hour, the wind S. S. W. and N. N. E. alternately.
18	2 e.	21 4 2	65	N W	About half past one, a most violent rain, which lasted a quarter of an hour, and constant thunder with lightning the whole afternoon.
	6½ e.	21 4 4	63¾	S E	Sky covered with dark clouds, and a violent rain begun which lasted two hours.
19	7 m.	21 4 6	65	E	Flying clouds throughout the air, but heaviest towards the south.
	12 n.	21 4 6	66	N E	Heavy scattered clouds throughout the air.
	2 e.	21 4 3	65	ditto	Clouds as above, only the horizon at S. S. W. is clear.
	6½ e.	21 4 4	64	ditto	Thick black clouds throughout the air, especially at south south-west.
20	7 m.	21 5 1	64	——	Clouds scattered every where throughout the air.
	12 n.	21 4 8	65½	N	Thick clouds throughout the air. The highest current from the south, the lowest comes from the north with great rapidity, rain and thunder.
	2 e.	21 4 6	64¾	S E	Clouds as above.
	6½ e.	21 5 1	63¾	E	Rain and violent thunder, which began at five in the evening, and lasted till midnight without intermission.
21	7 m.	21 5 1	63½	——	Clear, only a very few clouds in the horizon to the south-west.
	11¼ m	21 5	66	N E	Clouds thick and heavy at the east and north, violent rain.
	12 n.	21 5 9	65¾	W	Thick clouds to the north and west, at east south-east clear.
	2 e.	21 4 6	64	N N E	Clouds scattered throughout the whole air.
	6½ e.	21 4 6	63¾	ditto.	Many thick clouds to the north

Months.	Hours.	Barom.			Ther	Winds.	Remarks on the Weather.
JUNE		°	′	″	°		
							and east, wind changing from that to S. W.
22	7 m.	21	4	8	63	N E	Clear, only a few clouds to the horizon, and a thick mist to the north.
	12 n.	21	4	8	64¼	ditto	Clouds throughout the whole air.
	2 e.	21	4	5	64	N N W	It is clear near the horizon to the S. W. a current of air is seen coming from the N. W.
	6½ e.	21	4	4	63	N	Clouds throughout the whole air, with mist and rain, a violent wind in the night.
23	7 m.	21	5	2	61	W N W	Flying clouds through the air, especially north-west, west, and south-west.
	12 n.	21	5	1	64	W	Ditto; to the west of north it has rained often.
	2 e.	21	4	9	62¾	N N E	All the heavens covered with very thick clouds, it threatens rain.
	6½ e.	21	5	0	63	N E	Thick clouds throughout the air, which comes from north-west, there is a current thinner which comes from the S W.
24	6½ m.	21	4	9	63	S	Clouds throughout the whole air, a great quantity of mist going southward, thunder likewise.
	2 e.	21	4	7	65	N E	Clouds through all the air, and thunder.
	7 e.	21	4	4	63	N	Heavy clouds throughout the air.
25	7 m.	21	5	0	61¼	——	Ditto—the sun covered.
	12 n.	21	4	6	64	N	Clouds as above, the highest current of clouds come from the south.
	2 e.	21	4	3	64	ditto	The sky overcast, it rains violently.
	6½ e.	21	4	6	63¾	N E	Ditto.—It begins to rain small rain.
26	6½ m.	21	4	8	62¼	N	Clouds throughout the whole air, and so heavy they scarcely move.
	12 n.	21	4	8	65½	N E	Ditto.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
JUNE		°	′	″	°		
26	2 e.	21	4	3	64	S S E	Black clouds at south south-west, lighter flying clouds to the E.
	6½ e.	21	4	6	63	W	Heavy clouds throughout the whole air.
27	7 m.	21	5	7	60½	N E	Light flying clouds.
	12 n.	21	5	4	63¼	W	Very cloudy, sometimes there comes a blast from the east with a little *rain*.
	2 e.	21	5	1	63	N	Thick clouds throughout the air, it rains.
	6½ e.	21	4	8	62½	N N E	Thick clouds to the north-east and north, clear in the west and south, quite clear in the zenith.
28	6½ m.	21	5	7	61¾	E N E	Light clouds all over the sky, but in the south a little heavier.
	12 n.	21	5	3	63¼	N E	Heavy clouds, the higher current of wind south-west, the lower north-east, it threatens rain and violent thunder and lightning.
	2 e.	21	4	9	62	N N E	Small rain and thunder.
	6½ e.	21	5	3	61½	ditto	Thick clouds through all the air. There are currents of air which carry the clouds some to the W. and others to N. the lower current N. N. E.
29	6½ m.	21	5	4	61¾	——	Clear, there are a few streaky clouds in the horizon to the S.
	12 n.	21	5	0	63¼	N E	Light flying clouds thicker towards the horizon in the south-west.
	2 e.	21	4	8	63½	ditto	The air quite overcast.
	6½ e.	21	4	6	62¾	N	Clear, only a few clouds at the horizon.
30	7 m.	21	5	3	62	——	Light flying clouds throughout the horizon, especially to the south-east, and south-west.
	12. n.	21	5	2	62¼	N E	Heavy clouds through *all* the air, it rains; two currents of wind from the N. W. and N. E.
	2 e.	21	4	7	63	——	Clear, excepting a few clouds in the horizon towards the south-east, it thunders.

Months	Hours.	Barom.	Ther.	Winds	Remarks on the Weather.
		° ′ ″	°		
JUNE					
30	6½ e.	21 4 9	62½	S E	Heavy clouds throughout the air great appearance of rain.
JULY					
1	6½ m.	21 5 2	61½	S S W	Many clouds flying throughout the air.
	12 n.	21 5 1	63	N	Ditto.
	2 e.	21 4 9	62½	S½W	Ditto.---Especially at south-east.
	6½ e.	21 5 6	58½	W N W	Thick heavy clouds throughout the air.
2	6 m.	21 6 6	57	S	Flying clouds throughout the air.
	12 n.	21 5 7	65½	N W	White flying clouds throughout the air, they seem higher towards the horizon, the low clouds covering the north-east.
	2 e.	21 5 7	65½	ditto	Ditto.
	6½ e	21 6 3	63	N b W	Thick clouds to the N. and N. W. lighter in all other places.
4	5½ m.	21 6 9	57½	ditto	Many small clouds throughout the air.
	12 n.	21 6 9	59	N b E	Rain and very thick clouds throughout the air.
	2 e.	21 6 3	62½	N varying to E & W	Frequent clouds throughout the air.
	6½ e.	21 6 9	59	N	Ditto.
5	5½ m.	21 6 7	58	N W	Light flying clouds throughout all the air, and darker towards the horizon.
	12 n.	21 7 1	60	N b E	Thick clouds with violent rain.
	2 e.	21 6 8	62	N N W	The clouds are scattering, but remain thick at west.
	6½ e.	21 6 7	59	N N E	Very thick clouds to N. N. W. and N. E. the rest clear.
6	5½ m.	21 7 3	51½	N	White flying clouds throughout all the air, seeming to unite in S.
	12 n.	21 6 8	62	N N W	Very thick clouds, thunder and lightning in the S.
	2 e.	21 6 6	59	N	Clouds uniting throughout the air.
7	5½ m.	21 7 1	57	N E	Clear, only a very few small clouds in the horizon towards the east
	12 n.	21 6 7	51½	W	Violent rain, the wind changed first from north then to west.
	2 e.	21 6 7	59¼	N N W	Thick clouds throughout the air, rather clear in the east.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
JULY		°	′	″	°		
7	6 e.	21	6	5	57 3/4	N	Clouds through the whole air, but especially in the horizon to the north.
8	5 1/2 m.	21	7	2	55 1/2	N	Dark clouds in the horizon, everywhere but to the north is clear.
	12 n.	21	6	8	63 3/4	N N W	White clouds throughout the whole air.
	2 e.	21	6	6	63 1/2	N varying by S	Ditto.
	6 1/2 e.	21	6	7	59	N	Thick clouds in the horizon everywhere but in the north, where they are very black.
9	5 1/2 m.	21	7	0	57 1/2	N b E	Clouds united all through the air, the north only clear.
	12 n.	21	6	6	66	N varying S	Clouds all over the horizon, they seem to cross one another in the zenith, which as yet is clear.
	2 e.	21	6	4	66 1/4	N varying to N W	Thick clouds over the horizon, these from N. E. and N. cross one another in the S.
	6 1/2 e.	21	6	5	58	N varying to N W	Thick clouds unite in the S.
10	5 1/2 m.	21	6	7	57	W	The north, the south, south-east, and south-west, are covered with clouds.
	12 n.	21	6	5	65	N	White clouds in great masses all over the horizon, the zenith clear.
	2 e.	21	6	1	65 1/2	N	Great thick clouds throughout.
	6 1/2 e.	21	6	1	59	N varying to W & W	White flying clouds throughout the the air, only black at west near the horizon.
11	5 1/2 m.	21	6	3	61 1/2	W	Clouds united through all the air.
	12 n.	21	6	3	61 1/2	W	Thick black clouds throughout the air; thunder at a distance, with some drop of rain.
	2 e.	21	6	3	59 1/2	W	Thick black clouds cover the sky, there has fallen a small shower.
	6 1/2 e.	21	6	5	59 1/2	N	Thick black clouds through all the air, they come from the

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
JULY		°	′	″	°		
							north above the mountain of Koscum.
12	5½ m.	21	7	0	57¼	N	Ditto.
	12 n.	21	7	0	59¾	N	Ditto.
	2 e.	21	6	7	59½	N N E	Ditto.
	6¾ e.	21	6	7	59½	N E	Clouds throughout the whole air, excepting the west which is clear.
13	5½ m.	21	7	2	56½	ditto	Clear, only a small cloud in the west.
	12 n.	21	7	0	58	W vary-ing to N	Rain, and the whole air covered with clouds.
	2 e.	21	6	7	60	N vary-ing to E & W	Moderate rain, the air covered as above.
	6¾ e.	21	6	9	58¼	N	Large masses of clouds cover the whole air.
14	5¾ m.	21	7	3	56	N N E	Clear, only two very small clouds visible in the horizon to the E.
	12 n.	21	7	0	60	W	Very thick clouds through all the air, excepting in the east, which is clear.
	3 e.	21	6	7	60	N N W	The clouds intercept one another from the S. E. and S. W.
	6¾ e.	21	6	7	59½	N E	Rain.
15	5¼ m.	21	7	2	57	N N E	All the air is covered with very thick clouds.
	12 n.	21	6	9	60½	W	Ditto. With rain.
	6¾ e.	21	6	8	59½	N vary-ing to N N E	Very thick black clouds come from N. E. and S. E. a thick mist at north, which is very low.
26	5¼ m.	21	7	2	57	N	Thick clouds at north, and very low.
	12 n.	21	6	9	63⅛	N	White clouds flying throughout the air, heavy at S.
	2 e.	21	6	7	64	N	Thick clouds united throughout the air, heavier at S. and N. E.
	6½ e.	21	6	8	61	N	Very thick mist to the north.
27	6 m.	21	7	0	59	N W	All the air is covered with clouds joined together.
	2 e.	21	6	7	64½	N	Thick flat clouds through all the air.
	6½ e.	21	6	6	59¼	N	Ditto.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
JULY							
28	6 m.	21	7	1	57¼	N	Flying scattered clouds through all all the air, they come from east and south.
	12 n.	21	6	7	63	S W	Thick clouds through all the air, especially at south-west
	2 e.	21	6	4	63½	W b N	Clouds throughout all the air, but blackest towards north-east and north.
	6½ e.	21	6	3	61	N	Thick clouds, which come in great quantities from the N.
29	6 m.	21	6	7	57¾	W N W	Clouds throughout all the air, but thickest towards west and north-west.
	12 n.	21	6	5	63½	N	Large flying clouds throughout all the air, two currents of wind, one from S., the other from N.
	2 e.	21	6	1	65	N N W	Clouds closely united throughout all the air.
	6½ e.	21	6	4	61	N	Clouds come from north-east, are very low and heavy.
30	6 m.	21	6	6	58	N	All the air is covered with clouds closely united.
	12 n.	21	6	6	61½	W	Large clouds flying through all the air; they come from N. W. and N. E.
	2 e.	21	6	0	63	N	All the air is covered with clouds.
	6½ e.	21	6	2	59½	N	The clouds come from N. E. and are very thick.
31	6½ m.	21	6	6	58	N W	All the air is covered with clouds.
	2 e.	21	6	2	61	W N W	Thick united clouds through all the air.
	6½ e.	21	6	2	59	N N E	Large flying clouds very black, especially in the horizon at S. and N. heard thunder, and the sun covered.
AUG. 1	6 m.	21	6	6	58	ditto	Clouds flying throughout the air.
	12 n.	21	6	2	63	W S W	Thick flying clouds from the E. likewise some come to meet them from the west.
	2 e.	21	6	9	61	W	Rain for a few minutes.
	6½ e.	21	6	9	60½	N varying to N N E	Thick clouds at north, they come from north-east.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
AUG.							
2.	6 m.	21	6	4	57¾	W N W	Thick flying clouds throughout all the air.
	2 e.	21	6	6	61½	N N E	Rain.
	6½ e.	21	5	9	61½	N N W	Great masses of clouds at north-west.
3	6 m.	21	6	3	58	S W b N	All the air is covered with clouds.
	12 n.	21	6	6	59	N	It rained for some minutes.
	2 e.	21	6	1	59½	N	Flying clouds throughout the air.
	6½ e.	21	6	2	59	N N E	Rain, with clouds united all over the air.
	6 m.	21	6	5	58	N W	The clouds are joined all over the air, and a mist comes from south.
	12 n.	21	6	7	59	N E	Heavy clouds throughout the air, it rains.
	6½ e.	21	6	2	58	N	The whole sky is covered with clouds, it rains.
5	6 m.	21	6	7	56	N b E	All the air is covered with clouds.
	12 n.	21	6	5	60½	W	Moderate rain, the clouds cross from north-west, north, and south east.
	2 e.	21	6	2	58¼	N N E	Large flying clouds at N., which come from E.
	6½ e.	21	6	1	58¼	ditto	Large clouds remain in the horizon.
6	6½ m.	21	6	4	58	ditto	Flying clouds, they come frequent all over the air.
	12 n.	21	6	4	59½	S W	Large clouds all over the air.
	2 e.	21	6	1	59	N W	United clouds through all the air, and are very low, a stream of mist goes constantly to the S.
	6½ e.	21	6	1	59	N	All the sky is covered with thick clouds, the lowest come from south very quickly.
7	6 m.	21	6	1	54¾	S W	A thick mist covers the whole air.
	12 n.	21	6	5	58	W	Ditto.
	2 e.	21	6	2	61	S W	The clouds heavier to the south.
	6½ e.	21	6	4	56	N b W	The clouds are all joined throughout the air, there is a stream of mist coming from the north.
8	6 m.	21	6	7	55½	N N W	All the air is covered with clouds, it rains.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
AUG.		°	′	″	°		
8	12 n.	21	6	5	60	W varying to W S W	Thick clouds through all the air, they come from south-east and north east.
	2 e.	21	6	2	62	S varying to S S W	Ditto.
	6½ e.	21	6	2	57½	N b W	Thick clouds throughout the air, especially at north; they come from south-east, small rain.
9	6 m.	21	6	5	57	N E	Thick clouds in great masses thro' all the horizon.
	12 n.	21	6	3	60¾	N W	Clouds flying throughout all the air, they come from north and south.
	2 e.	21	6	1	61¾	W S W	Rain from the north, and very thick clouds throughout the air, they come from north and south.
	6½ e.	21	6	1	58½	N varying to N W	Rain and thick clouds throughout the air. Two currents of wind, the one from the south, the other from the north.
10	6 m.	21	6	9	56¾	N E	Thick clouds cover all the air.
	12 n.	21	6	5	60¾	W	Clouds mixed with large spaces of clear. The clouds come from the east with great violence against the wind.
	2 e.	21	6	2	60	N N E	Thick clouds throughout the air, two currents of wind, one from N. E. the other from N. W. cross one another. Thunder in the W.
	6½ e.	21	6	3	58	N	All the sky is covered with thick clouds. The upper current from the east, the next from north, and the last so low as to touch the earth. They cross with great velocity and force.
11	6 m.	21	6	6	56	N E	Clouds cover the whole face of the sky.
	12 n.	21	6	4	61	S E	Clouds throughout the air, the wind changing two currents, north and south.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
AUG.		° ′ ″	°		
11	2 e.	21 6 3	59	N b E	Moderate rain, the whole sky overcast with clouds.
	6½ e.	21 6 2	59	N varying to N E	Very thick clouds throughout the air. Two currents of wind, the highest from north, the lowest from north-east.
12	6½ m.	21 6 9	56½	N N E	Light clouds cover the sky like a veil.
13	12 n.	21 6 6	61¼	W	Large clouds near the horizon, especially at N. N. E.
	2 e.	21 6 4	62	N W	The sky is overcast with thick clouds, and closely united a south.
	7½ e.	21 6 2	60	N	Black clouds, and very low in the horizon. Two currents of wind, the one E. S. E. the other N. which cross each other.
14	6½ m.	21 6 9	55½	N E	Clouds blowing about the horizon, the zenith clear.
	12 n.	21 6 4	61½	ditto	A current of clouds from north and south, thunder and lightning through all the sky.
	2 e.	21 6 3	60	W varying to N	Violent rain, it has thundered two hours without interval.
	6½ e.	21 6 2	58	N N E	Large flying clouds throughout the air.
15	6½ m.	21 6 4	56	W	Ditto.
	12 n.	21 6 3	61½	N	Clouds through all the air, and it begins to rain.
	6½ e.	21 6 2	60¼	N N E	Black clouds. Two currents of air come from the N. and S. along the Mountain of the Sun. It has thundered and lightened all afternoon, and the lightning runs in sheets upon the earth like water.
16	6½ n.	21			
	12 n.	21 6 7	57	ditto	The sky overcast with thick clouds.
	2 e.	21 6 6	58	N	Ditto.
	6½ e.	21 6 2	61¼	N N E	The sky overcast with clouds, excepting in the south-west clear.
17	6 m.	21 6 8	50	ditto	Thick clouds throughout the air.
			½	ditto	Thin clouds like a veil cover the sky.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
AUG.							
17	12 n.	21	6	4	61⅜	N	Thick black clouds cover the sky, and come from north.
	2 e.	21	6	3	61½	N varying to N N E.	Clouds as above, but thickest at south.
	6½ e.	21	6	3	60	N b E	Black clouds throughout the air, especially at north-west.
18	6 m.	21	6	9	55⅜	N E	Thin clouds cover the air like a veil.
	12 n.	21	6	4	61⅜	N W	Very thick clouds throughout the air, it rains, clouds come from north and south.
	2 e.	21	6	4	61⅜	N W	Ditto.
	6½ e.	21	6	4	57⅜	N N E	Black clouds all over the air.
19	6½ m.	21	6	8	56½	ditto	Small light clouds fly throughout the air.
	12 n.	21	6	5	61½	ditto	Rain, thunder, and lightning.
	2 e.	21	6	3	58	N b E	Black clouds all over the sky.
	6½ e.	21	6	3	60	N N E	Ditto.
20	6 m.	21	6	9	56½	ditto	Flying clouds cover the whole air.
	12 n.	21	6	5	61	N N W	It begins to rain, clouds very heavy, they come from north and south, and meet in the zenith.
	2 e.	21	6	3	62½	N	Great clouds throughout the air, the S. W. is clear.
	6½ e.	21	6	3	59	N N E	Clouds throughout the air, they come from the N.
21	6 m.	21	6	9	55¼	ditto	Clear and cloudless.
	12 n.	21	6	5	63½	N varying to N N E	Thick clouds come from the south, some small ones from the north.
	2 e.	21	6	3	64	N N W	Thick clouds cover the whole air, they come with great violence from the north.
	6½ e.	21	6	5	59¼	N	Thick clouds, and very low, from the north, thunder and rain without ceasing.
22	12 n.	21	6	4	63	N	Clouds, with violent rain, thunder, and lightning.
	6½ e.	21	6	4	58¼	N	Broken clouds throughout the air.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
AUG.		°	′	″	°		
							but black ones come from the north.
23	6 m.	21	6	8	58	N	Flying clouds cover the air.
	12 n.	21	6	4	59¼	N	Thick clouds throughout the air, but thickest at north.
	2 e.	21	6	3	61¼	N b E	Thick clouds throughout the air, rain in the S.
	6½ e.	21	6	3	60¼	N N E	Rain and thick clouds.
24	7 m.	21	6	7	57	N E	Clear, except a little hazy at S. S. W.
	12 n.	21	6	3	59½	N	Thick clouds throughout the air, it rains at north.
	2 e.	21	6	6	59	N	It rains at east.
	6½ e.	21	6	3	58¼	N	Rain and thick clouds throughout the air, especially in the west.
25	7 m.	21	7	0	56½	N E	Great clouds throughout the air, especially at south and north, a stream of dark mist comes from the south very low.
	12 n.	21	6	6	62	W S W	Great and thick clouds throughout the sky, especially at south and north.
	2 e.	21	6	5	59½	ditto	Moderate rain, thick clouds throughout the sky.
	6½ e.	21	6	6	57	N	Dark clouds very low throughout the air, it is very cold.
26	6½ m.	21	7	0	55½	N N	Light clouds but frequent throughout the air.
	12 n.	21	6	7	58¼	W	It rains violently, especially from the south-west.
	6½ e.	21	6	4	59	N W	Very thick clouds throughout the air, a low stream comes from north.
27	6½ m.	21	6	3	56	N	Light clouds fly throughout the air, they come from east and west.
	12 n.	21	6	5	61½	W b S	Large thick clouds, especially at north, the lowest come from the west
	2½ e.	21	6	4	61½	N	Thick cloud in the horizon, it rains hard, the air is all covered.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
AUG.					
27	6½ e.	21 6 4	59½	N	Thick clouds, all the air is covered, especially at south and north.
28	6 m.	21 6 8	57	N E	All the air is cloudy.
	12 n.	21 6 4	61	N	Clouds as above, a stormy rain at north-west.
	2 e.	21 6 4	58	N	Thick clouds in the horizon.
29	6 m.	21 7 0	57	N E	Large clouds flying throughout the air, especially at south.
	12 n.	21 6 5	62	W	Wandering clouds throughout the air.
	2 e.	21 6 4	62	N N W	Clouds as above, but thicker.
	6½ e.	21 6 4	59	N	Large masses of clouds from the N. W.
30	6 m.	21 6 6	56½	N	Both east and west are covered with thick clouds.
	12 n.	21 6 4	59	N	Great clouds throughout the air, violent rain, thunder, and lightning.
	2 e.	21 6 3	63	N N E	Large clouds throughout the air, and a moderate rain.
	6½ e.	21 6 4	58¾	N	Very thick clouds through the whole horizon; these go in currents to the south-west and north-east, but leave the zenith clear.
31	6 m.	21 6 5	57	N	Light clouds throughout the air.
	12 n.	21 6 3	62	N	Flying clouds, but dark to the south.
	2 e.	21 6 3	64	N	Large clouds, especially at south and north.
	6½ e.	21 6 3	61	N N E	Very thick black clouds cover the air.
	6 m.	21 6 8	50½	N E	Clear and cloudless.
SEPT. 1	12 n.	21 6 5	62¾	N	Thick clouds cover the air, they come from north and south.
	2 e.	21 6 3	63	N N E	Thunder at south-west.
	6½ e.	21 6 4	60	N	Dark clouds in the horizon, especially at S. W.
2	6 m.	21 6 9	57	N E	Clear and cloudless.
	12 n.	21 6 4	64	N	Thick broken clouds, they stream from north and south.
	2 e.	21 6 3	65¼	N	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
SEPT.					
2	6¼ e.	21 6 3	61	——	Clear small clouds in the horizon at N. W. and S.
3	6 m.	21 6 6	58¾	N N E	Clear.
	12 n.	21 6 4	63¼	N	Clouds throughout the air; especially at north, thunder in the east.
	2 e.	21 6 4	63¼	N varying to N E	Moderate, but constant rain, coming from the north-west.
	6½ e.	21 6 3	60	N N E	Clouds in the horizon to the north and north-west.
4	6 m.	21 6 9	56½	N by E	Clear.
	12 n.	21 6 7	61	E N E	Clouds throughout the air, especially at west, violent thunder and lightning.
	2 e.	21 6 4	60	N E	Clouds throughout the air, and rain, which seems to be violent to the westward.
	6½ e.	21 6 7	58	N	Very thick clouds throughout the air, especially at east, south, and south-west.
5	6 m.	21 7 3	58	N N E	All the air is covered with light clouds.
	12 n.	21 7 0	62	N	Clouds which have overcast all the air.
	2 e.	21 6 5	63	N N W	Ditto.
	6½ e.	21 7 0	60¼	N N E	Violent rain and clouds everywhere, especially at north.
6	6 m.	21 7 1	57	N E	Small clouds throughout the air, they come from the south and north.
	12 n.	21 6 6	63½	N N E	Large clouds throughout the horizon.
	2 e.	21 6 4	66	ditto	Ditto.
	6½ e.	21 6 ½	61	N	Large dark clouds from the north and east.
7	6 m.	21 6 8	57½	N E	Light clouds flying throughout the air.
	12 n.	21 6 7	61½	W	A most violent rain, which began with north-east winds, but changed to west, and ended in a hail shower.
	2 e.	22 4 0	62	N E	Rain and thick clouds, the rain

Months.	Hours.	Barom. °	′	″	Ther. °	Winds	Remarks on the Weather.
SEPT.	...						comes most violently from north-west.
7	6½ e.	21	6	4	60	N	The clouds are united through the whole air.
8	6 m.	21	7	2	67	N E	Light clouds in the horizon.
	12 n.	21	6	6	65	W N W	Ditto.
	2 e.	21	6	4	67	N W	Ditto.
	6½ e.	21	6	5	63½	N	Low dark clouds in the north-west and south-west.
9	6¼ m.	21	7	3	58¾	N E	Small white clouds *scattered thro'* the horizon.
	12 n.	21	6	7	67½	S E	Light small clouds through the air.
	2 e.	21	6	5	68½	N E	Great clouds through all the horizon.
	6½ e.	21	6	5	66	N N E	Black clouds in the horizon to the W. N. W. and S. W.
10	6 m.	21	7	2	58½	N W	Clear and cloudless.
	12 n.	21	6	6	68½	E varying to N E	Thick clouds throughout the air.
	2 e.	21	6	5	69	N N E	Small flying clouds throughout the air.
	6½ e.	21	6	6	64	ditto	Large clouds occupy the air.
11	6 m.	21	7	0	60½	N	Ditto.
	12 n.	21	6	5	66½	N N E	Ditto.
	2 e.	21	6	4	65	N E	Violent rain from N. E. and the whole sky overcast.
	6½ e.	21	6	5	69½	N varying to N E	Thick clouds throughout the air.
12	6½ m.	21	7	0	57½	N	Light clouds cover the sky like a veil.
	12 n.	21	6	5	65	N	Clouds cover the air, which come from the north-east.
	6½ e.	21	6	5	61	N b E	Light clouds towards the zenith, heavy ones towards the horizon at north and west, lightning at west.
13	6 m.	21	6	9	67	N N E	Clear.
	12 n.	31	6	4	65¼	W S W	White clouds fly throughout the air, which come from north-east and south-west.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		◦ ′ ″	◦		
SEPT.					
13	2 e.	21 6 4	65	N	Clouds as above, but more frequent.
	6½ e.	21 6 3	62	N	Large black clouds in the horizon at south.
14	6 m.	21 6 9	58¼	N N E	Clouds cover the whole air.
	12 n.	21 6 4	65	N N W	Large clouds from N. W. and S. E.
	2 n.	21 6 3	66	ditto	Large clouds through the whole air.
	6½ e.	21 6 3	63	N varying to W	Black clouds in the horizon at north.
15	6¼ m.	21 6 8	59	N N E	Ditto.
	12 n.	21 6 4	66	S varying to S E	Ditto.
	2 e.	21 6 3	66	N	The clouds are lighter.
	6½ e.	21 6 5	61	N	All the air is covered with thick clouds, lightning at north-west.
16	6½ m.	21 7 2	59	N N E	The whole air is covered with thick clouds.
	12 n.	21 6 7	61¾	W S W	Ditto.
	2 e.	21 6 4	65	ditto	Ditto.
	6½ e.	21 6 5	61	N	It rains violently, the sky all overcast.
17	6 m.	21 7 2	58¼	N N E	The sky clear, except a small cloud in the horizon at west.
	12 n.	21 6 6	65	N W	Great clouds cover the air, which come north-east and south-west.
	6½ e.	21 6 4	62	N	Thick clouds to the horizon.
18	6 m.	21 7 0	58¼	N E	Clear.
	12 n.	21 6 4	67	E	Clouds fly through the air.
	2½ e.	21 6 4	67	N varying to N N W	Ditto.
	6½ e.	21 6 4	62	N	Ditto.
19	6 m.	21 6 8	58½	N E	Clear.
	12 n.	21 6 4	66	N b E	Many clouds throughout the air.
	2 e.	21 6 4	64¾	ditto	Large clouds darken the whole air.
	6½ e.	21 6 4	63	ditto	All the air is covered with clouds.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
SEPT.		°	′	″	°		
20	6 m.	21	6	8	59	N E	Light clouds cover the air thicker towards the horizon.
	12 n.	21	6	4	66	N W	Thick clouds throughout the air, they come from west.
	6½ e.	21	6	6	60½	N E	Ditto.
21	6 m.	21	7	0	57	N b E	Clear.
	12 n.	21	6	5	60½	N W	A quantity of black clouds throughout the horizon, they move from the north-east.
	2 e.	21	6	4	64	ditto	Ditto.
	6½ e.	21	6	3	64	N E	Thick clouds throughout the air, the lower current comes from the south, the other from north-east.
22	6 m.	21	6	7	57½	N E	Clear everywhere, excepting one cloud in the horizon to the west.
	12 n.	21	6	3	67	S	A dark cloud is split into many, and covers the whole air.
	2 e.	21	6	3	68	N N E	Flying white clouds throughout the air.
	6½ e.	21	6	3	63½	N E	Small rain, the clouds are thick and heavy, they come with the wind from north-east.
23	6 m	21	6	4	58	ditto	Clear small clouds to the horizon at west.
	12 n.	21	6	3	67	ditto	Thick heavy clouds throughout the air, which come from north-east.
	2 e.	21	6	4	65	N W	Thick clouds and thunder at west.
	6½ e.	21	6	3	61	N E	Thick black clouds throughout the air.
24	6 m.	21	6	8	58	ditto	Ditto.
	12 n.	21	6	3	65¾	S E	Ditto.
	2 e.	21	6	3	65¼	N W	Ditto.
	6¼ e.	21	6	3	63	N	Thick heavy clouds throughout the air, especially at south and west.
25	6 m.	21	6	4	59	N E	Thin clouds cover the whole air.
	12 n.	21	6	3	66½	E N E	Ditto.
	2 e.	21	6	2	68	N W	Ditto.
	6½ e.	21	6	3	62	N	The clouds are heavier,

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
SEPT.							
26	6¼ m.	21	6	6	59	N E	The clouds are heavier.
	12 n.	21	6	3	68	E b N	Strong squalls of wind come in starts, white clouds through the air, coming from north-east.
	2 e.	21	6	2	68¾	N E	Ditto.
	6½ e.	21	6	2	65	N	Clear.
27	6 m	21	6	8	69¼	N N E	Clear.
	12 n.	21	6	3	68	E b N	Ditto.—But a few flying clouds.
	2 e.	21	6	2	69¼	N E	Thick clouds scattered about the air.
	6½ e.	21	6	3	63	W N W	Black clouds in the horizon to the south and west.
28	6 m.	21	7	1	57¾	N E	Small black clouds flying in the west.
	12 n.	21	6	4	68	ditto	Small white clouds in the north north-east and north-west.
	2 e.	21	6	3	70	ditto	Ditto.
	6½ e.	21	6	3	64	N	Clear, except a few small clouds to the west.
29	6 m.	21	7	0	58	N E	Clear.
	12 n.	21	6	4	67½	E S E	Ditto.
	2 e.	21	6	3	69	ditto	Ditto.
	6½ e.	21	6	3	66½	N	Flying clouds throughout the air, they come from the east north-east and south-east.
30	6 m.	21	6	7	58¾	N E	Clear.
	2 e.	21	6	3	70	E S E	White light clouds throughout the air.
	6½ e.	21	6	4	66	N	Clear, except a few small clouds in the horizon to the west.
OCT.							
1	6 m.	21	6	9	58	N E	Clear, only a few clouds at south-west.
	12 n.	21	6	4	69	W	Clouds cover the whole air.
	6½ e.	21	6	4	66	N b W	Clear.
2	6 m.	21	6	8	59½	N E	Ditto.
	12 n.	21	6	4	69½	ditto	Ditto.
	2 e.	21	6	3	69	N	Clouds throughout the whole air, clear in the east.
	6½ e.	21	6	4	66	N	Clear, excepting a very few small clouds at south-east and south-west.
3	6 m.	21	6	6	60	N N E	Clear.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
OCT.							
3	12 n.	21	6	3	69½	N E	Clear.
	6½ e.	21	6	2	67½	N	Ditto.
4	6 m.	21	6	4	60	N E	Clear till mid-day, it then overcast, and rained an hour with violent thunder and lightning.
	12 n.	21	6	3	64	N varying to N W	Thick clouds near the horizon at north-west and south-west.
5	6 m.	21	6	7	60	N	Light clouds throughout the air.
	12 n.	21	6	3	64	N	Small rain, the whole sky overcast; it thunders.
	2 e.	21	6	3	63	N	Clouds throughout the air, a little rain at south-west.
	6½ e.	21	6	2	61½	N	Clouds throughout the air.
6	6 m.	21	6	9	58	N E	Ditto.
	12 n.	21	6	2	68	E	Ditto.
	6½ e.	21	6	2	64	N b E	Ditto.
7	6 m.	21	6	6	59	ditto	Clear.
	12 n.	21	6	2	68½	N E	Clouds flying through the air.
	2 e.	21	6	1	67	N b E	The sky is overcast, but the sun appears sometimes.
	3½ e.	21	6	1	67	N E	Rain and violent large hail, it lasted about half an hour, and came from the south against the wind, some of the hail nearly half an inch round. It lay upon the Mountain of the Sun near one hour without melting.
	6½ e.	21	6	2	61½	N	Many clouds through the air.
8	6 m.	21	6	7	58½	N	Light clouds flying throughout the air.
	12 n.	21	6	2	65½	N E	Ditto.
	2 e.	21	6	1	67	N W	Ditto.
	6½ e.	21	6	0	61½	N	Clear, unless some clouds in the east and west near the horizon.
9	6½ m.	21	6	8	58	N	Small clouds scattered through the air.
	12 n.	21	6	0	66	S	Large clouds come from south-west.
	6½ e.	21	6	1	60	N E	Dark clouds throughout the air.
10	6½ m.	21	6	6	57¾	ditto	Clear.
	12 n.	21	6	2	64	ditto	Clouds flying throughout the air. the sun covered.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
OCT							
10.	6½ e.	21	6	3	61	ditto	Violent rain, thunder, and lightning.
11	6½ m.	21	6	6	57¼	ditto	Clear, only some small clouds in the horizon at N. W. south, and south-west.
	12 n.	21	6	4	63	S W	White flying clouds from the S. E. and S. W.
	2 e.	21	6	1	60¼	N	The sky is overcast, and there is appearance of rain.
	6½ e.	21	6	3	60	N	The air overcast with thick clouds.
12	6½ m.	21	6	8	56	N E	Thin flying clouds throughout the air.
	12 n.	21	6	2	63¼	W S W	Thin white clouds to the west and to the north.
	2 e.	21	6	0	65¼	N	Large moving clouds throughout the air.
	6½ e.	21	6	1	63½	N E	Ditto.
13	12 n.	21	6	1	64¼	N b W	Ditto, the sun covered.
14	6½ e.	21	6	0	63	N	All the air is covered with clouds.
15	6½ m.	21	6	2	58¼	N E	Clear.
	12 n.	21	6	1	66	ditto	Light flying clouds throughout the air.
	2 e.	21	6	0	65	N	Clear.
16	6½ m.	21	6	5	58¾	N N E	Ditto.
	12 n.	21	6	2	66¼	N W	Ditto.
	2 e.	21	6	0	69½	W	White clouds flying throughout the air.
	6½ e.	21	6	9	66	N	Ditto.—They come from south-east.
17	6½ m	21	6	1	59	N E	Clear.
	12 n.	21	6	1	67	S W	Cloudy.
	2 e.	21	6	1	69	N	White clouds come from the south-east.
	6½ e.	21	6	1	66	W	Clear.
18	6½ m.	21	6	3	59	N E	Ditto.
	12 n.	21	6	1	67	N W	Clouds throughout the air.
	2 e.	21	6	0	67½	N b W	Ditto.
	6½ e.	21	6	0	65	N	Clear.
19	6½ m.	21	6	1	59¾	N b E	Thin clouds like a veil cover the whole sky.
	12 n.	21	6	1	67¼	ditto	White flying clouds throughout the air.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
OCT.					
19	2 e.	21 6 0	69½	S W	White flying clouds throughout the air.
	6¼ e.	21 6 0	65⅜	N W	Ditto.
20	6¼ m.	21 6 4	58¾	N E	Ditto.
	12 n.	21 6 1	67	N N E	Small flying clouds throughout the air.
	2 e.	21 6 0	67½	N b E	Ditto.
	6½ e.	21 6 1	65	N b E	Ditto.
21	6¼ m.	21 6 4	59½	N E	Ditto.
	12 n.	21 6 0	67⅗	N N E	Ditto.
	2 e.	21 6 0	69¼	N W	Ditto.
	6½ e.	21 6 1	67	N	Ditto.
22	6¼ m.	21 6 4	61	N E	Clear.
	12 n.	21 6 0	68⅘	S S W	White flying clouds throughout the air, the sun is sometimes darkened.
	2 e.	21 6 0	70	N	Ditto.
	6½ e.	21 6 0	67	N	Clear.
23	6¼ m.	21 6 1	61	N b E	Ditto.
	½p. m.	21 6 0	69	S W	White flying clouds throughout the air.
	2 e.	21 5 9	69¼	W S W	There has fallen three or four small showers.
	6½ e.	21 6 0	66⅔	N	Thick clouds throughout the air.
24	6½ m.	21 6 2	61	N E	Clear.
	12 n.	21 6 0	66⅓	N	Flying clouds throughout the air, they come from N. E. and S. E.
	2 e.	21 5 8	66⅖	N W	The sky overcast, small showers and thunder.
	6½ e.	21 6 0	65	N	Clear.
Nov. 20	12 m.	21 4 9	71	N b NW	Flying clouds throughout the air.
	2 e.	21 4 5	72	N N W	Ditto.
	6 e.	21 5 5	69⅔	N	Black clouds near the horizon.
21	6 m.	21 6 6	60	N E	Clear.
	12 n.	21 5 7	71	W varying to S W	Ditto.
	2 e.	21 5 1	73	W	Little clouds flying throughout the air, they come from north-east.
	6 e.	21 5 7	69½	N	Clear.
22	6 m.	21 6 7	61	N E	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
NOV.					
22	12 n.	21 5 5	71	W	Flying clouds throughout the air.
	2 e.	21 4 9	74	W	Ditto.
	6½ e.	21 5 7	69	N E	Black clouds in the horizon at west.
23	6 m.	21 6 5	61	ditto	Clear.
	12 n.	21 5 4	71	W	Light clouds throughout the air.
	2 e.	21 4 8	74	N b W	Ditto.
	6 e.	21 5 4	69	N W	Clear.
24	6 m.	21 6 2	61	N b E	Ditto.
	12 n.	21 4 9	72	W S W	White clouds flying throughout the air, they come from north-east.
	2 e.	21 4 7	71	W	Ditto.
	6 e.	21 5 3	70	N N W	All the south is covered with thick clouds.
25	6 m.	21 6 3	60½	N E	Clear, only a thin veil covers the sky south.
	12 n.	21 5 2	70	N N E	Ditto.
	2 e.	21 4 8	71	N W	Ditto.
	6 e.	21 5 8	64½	S S W	All the sky is covered with very thick clouds, which come from north-east.
26	6½ m.	21 6 3	59	N	Small spotted clouds near the horizon, all the rest clear.
	12 n.	21 6 5	68	N N W	The air is covered with clouds which come from the south.
	2 e.	21 5 0	70½	N E	Small white clouds throughout the horizon.
	6 e.	21 6 5	66	N N W	Clear, only small clouds in the horizon, at north.
27	6½ m.	21 6 2	59½	N	Ditto.
	12 n.	21 5 6	60	W S W	A quantity of clouds through the whole air, especially at south.
	2 e.	21 5 2	69	N W	Clouds as above; there have been three blasts of wind which lasted for about half a minute each, then calmed.
	6 e.	21 5 5	67	N N W	Clear.
28	6½ m.	21 6 4	60½	N	Clear, except a few small clouds to the W. S. W.
	12 n.	21 5 8	69	N b W	Flying clouds throughout the air, the sun is covered.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
NOV.					
28	2 e.	21 5 2	71	ditto	Flying clouds from the south.
	6 e.	21 5 7	67	N N W	Light clouds like a veil.
29	6½ m.	21 6 8	59	N N E	Clear and cloudless.
	12 n.	21 5 8	69	N W	Clouds flying throughout the air, especially at south, the sun is covered.
	6 e.	21 5 8	65½	ditto	Clear and cloudless.
30	6½ m.	21 6 9	59	W N W	Thin clouds throughout the air.
	12 n.	21 6 0	69½	N varying to N W	Thick clouds throughout the air, which come from east, the sun covered.
	2 e.	21 5 4	71	N W	Thin clouds throughout the air.
	6 e.	21 5 7	67	ditto	Ditto.
DEC. 1	6½ m.	21 6 8	59½	N	Clear.
	12 n.	21 5 9	69	N W	White flying clouds throughout the air.
	2 e.	21 5 2	72	ditto	Ditto.
2	6½ m.	21 6 2	59½	N b E	Clear.
	12 n.	21 5 7	69	N W	Thin white clouds throughout the air.
	6 e.	21 5 6	68	N b E	Clear.
3	6 m.	21 6 3	59½	N E	Clear and cloudless.
	12 n.	21 5 4	70½	N W	Ditto.
	2 e.	21 4 4	73	N b W	Ditto.
	6 e.	21 5 3	69	N N E	Ditto.
4	6 m.	21 6 4	59	N E	Ditto.
	12 n.	21 5 8	69½	N W	Clear, excepting some small streaks in the horizon to the west.
	2 e.	21 5 0	73½	N varying to N W	Ditto.
	6 e.	21 5 6	69½	N W	Clear, except some small clouds to the south.
5	6 m.	21 6 4	59	N N E	Clear and cloudless.
	12 n.	21 5 5	69½	N W	Ditto.
	2 e.	21 4 9	73	ditto	Ditto.
	6 e.	21 5 4	67½	N	Ditto.
6	6 m.	21 6 3	59½	N E	Ditto.
	12 n.	21 5 4	70	W b N	Small flying clouds throughout the air.
	2 e.	21 4 8	71½	ditto	Ditto.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
DEC.					
6	6 e.	21 5 3	68	N W	Thick heavy clouds throughout the air, they come from the south-east.
7	6½ m.	21 6 3	60½	N E	Clear.
	12 n.	21 5 6	69	W N W	Small clouds scattered like a veil about the air.
	2 e.	21 5 2	70⅓	N W	Ditto.
	6½ e.	21 6 0	65½	ditto	Clear, except some small streaks in the horizon, at west and south-west.
8	6½ m	21 6 6	60	N E	Clear.
	12 n.	21 5 7	70	S W	Large clouds throughout the air, which come from north-east, the sun is covered.
	2 e.	21 5 2	71½	N	Ditto.
	6½ e.	21 6 1	66	N W	Large dark clouds throughout the air, they come from the north-east.
9	6½ m.	21 6 8	60	N E	Clear and cloudless.
	12 n.	21 5 7	70	ditto	Flying clouds come from the north-west.
	2 e.	21 5 0	72	N W	The clouds are increased in number.
	6½ e.	21 5 8	67½	N	Large clouds throughout the air, they come from north-west.
10	6½ m.	21 6 6	59½	N E	Clear.
	12 n.	21 6 1	67	ditto	Heavy clouds cover the air from the north-east.
	2 e.	21 5 7	68	N	Ditto.
	6½ e.	21 6 0	67	N b W	Clouds in the south-east and south.
11	6½ m.	21 6 8	60½	N E	Clear.
	12 n.	21 6 1	69	N W	Clouds throughout the air, the sun covered.
	6½ e.	21 6 0	67½	N	Flying clouds throughout the air, especially at south-west.
12	6½ m.	21 6 4	60½	N b E	Clear.
	12. n.	21 5 8	69	N N W	Small flying clouds throughout the air.
	6½ e.	21 5 8	67½	N	Ditto.
13	7 m.	21 6 4	60	N E	Clear.
	12 n.	21 5 9	69	W	Ditto.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		″	′	″	°		
DEC.							
13	2 e.	21	5	2	70½	N W	Small clouds flying through the south.
	7 e.	21	5	7	67	N N W	Clear.
14	7 m.	21	6	3	60	N b W	Ditto.
	7 e.	21	5	5	67	W	Ditto.
15	7 m.	21	6	7	59	N N E	Ditto.
	2 e.	21	5	3	70½	N b W	Ditto.
	7 e.	21	5	9	66½	N	Ditto. Only a small white streak of clouds in the horizon to the south-west.
16	7 m.	21	6	7	59½	N E	Clear and cloudless.
	12 n.	21	6	0	69½	W	Small clouds near the zenith.
	6½ e.	21	6	0	69	W	Clear, only some small streaks of clouds in the horizon to the south-west.
17	6½ m.	21	6	5	59½	N E	Light clouds like a veil cover the air.
	12 n.	21	6	5	69½	W	Small clouds throughout the air.
	2 e.	21	4	7	72	W	Ditto.
	6½ e.	21	5	4	68	N W	Dark clouds in the horizon to the west and south-west.
18	6½ m.	21	6	3	60	N E	Clear.
	12 n.	21	5	2	70	W	Light clouds throughout the air.
	2 e.	21	4	6	72	W	Ditto.
	6½ e.	21	5	2	69	N varying to N W	Large black clouds cover the whole sky, they come from the east.
19	6½ m.	21	6	3	62	N E	Clear, only small streaks of black clouds to the west.
	12 n.	21	5	3	70	N W	White clouds through the air, they come from north-east.
	2 e.	21	5	0	69	W	Ditto.
	5½ e.	21	5	2	70	N W	Great clouds throughout the air, a small rain for seven minutes, the sky cloudy to the north.
	6½ e.	21	5	3	69	ditto	Ditto.
20	6½ m.	21	6	2	63½	N E	Clear, except a few streaks of clouds at the horizon.
	12 n.	21	5	3	71	ditto	Many clouds throughout the sky, the sun is covered.
	2 e.	21	5	1	70	W	Ditto.
	6½ e.	21	5	4	70	N N E	Clear.
21	6 m.	21	6	6	62	N E	Ditto.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
DEC.							
21	12 n.	21	5	8	71	N E	Clear.
	2 e.	21	5	3	70	N N E	Clear and cloudless.
	6½ e.	21	6	0	71	N E	Clear, but some streaky clouds in the horizon at south and south-west.
22	6½ m.	21	7	0	63	ditto	Clear and cloudless.
	12 n.	21	5	8	72	W	Ditto.
	2 e.	21	5	2	74	N E	Ditto.
	6½ e.	21	6	1	70⅔	W	Ditto.
23	6½ m.	21	7	2	61⅓	N E	Ditto.
	12 n.	21	5	7	71	W	Ditto.
	2 e.	21	5	0	73	W	Ditto.
	6½ e.	21	5	6	71	W	Ditto.—Only a few streaks in the horizon to the south.
24	6 m.	21	6	6	60	N E	Clear and cloudless.
	12 n.	21	5	3	71	W	Ditto.
	2 e.	21	5	0	73	W	Ditto.
	6 e.	21	5	5	71	W	Ditto.
25	6½ m.	21	6	4	61⅓	N E	Ditto.
	12 n.	21	5	3	71⅓	W	Ditto.
	2 e.	21	4	7	71	W	Ditto.
	6½ e.	21	5	6	70⅔	W	Ditto.
26	6½ m.	21	6	4	62	N E	Ditto.
	12 n.	21	5	6	70⅔	W	Ditto.
	2 e.	21	5	0	73	W	Ditto.
	6½ e.	21	5	9	71⅓	W	Ditto.
27	6½ m.	21	6	4	62	N E	Ditto.
	12 n.	21	5	6	70⅔	W	Ditto.
	2 e.	21	5	0	73	W	Ditto.
	6½ e.	21	5	9	71⅓	W	Ditto.
28	6½ m.	21	6	4	63	N E	Clear.
	12 n.	21	5	4	71	W	Ditto.
	2 e.	21	4	9	73	W	Small flying clouds throughout the air.
	6½ e.	21	5	2	71	W	Small streaky clouds in the horizon; at west-south-west, about ten at night, there came violent blasts of wind, which lasted only a few minutes.
29	6½ m.	21	6	2	63	N E	Small thin clouds throughout the air.
	12 n.	21	5	4	71	W S W	Small flying clouds.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
DEC.					
29	2 e.	21 4 7	73½	W	The clouds increase, and the sun covered.
	6½ e.	21 5 3	70	W	Streaky clouds to the west and south-west.
30	6½ m.	21 6 4	62½	N E	Light flying clouds throughout the air.
	12 n.	21 5 4	70	W	The clouds are turned heavier.
	2 e.	21 4 2	72	W	Heavier still, and the sun covered.
	6½ e.	21 5 2	70½	W	Large clouds in the horizon to the south.
31	6½ m.	21 6 0	63½	N E	Thick clouds flying throughout the air.
	12 n.	21 5 7	71½	W	The clouds are larger and more united, the sun is covered, and the south only clear.
	2 e.	21 4 6	72	W	Ditto.
	6½ e.	21 5 7	69½	WNW	Many clouds at the south-east and east.
					GONDAR, 1771.
JAN.					
1	6½ m.	21 6 4	63½	N E	Small streaks of clouds in the horizon at south-west.
	12 n.	21 5 6	72	W S W	Great white clouds throughout the air, the sun covered.
	2 e.	21 5 0	72½	ditto	Ditto.
	6½ e.	21 5 8	69	W	Clouds near the horizon.
2	6½ m.	21 6 3	62½	N E	Streaky clouds in the horizon at west.
	12 n.	21 5 7	69	W	Small white flying clouds.
	2 e.	21 5 0	72½	W S W	Clear, only a few streaks in the horizon.
	6½ e.	21 5 5	68	W	Many clouds throughout the air.
3	6½ m.	21 6 3	61	W	Clear, except a little mist at west.
	12 n.	21 5 1	70	W	Small flying clouds throughout the air.
	¼ p. m.	21 5 0	71	W	A violent storm of wind, changing to all points of the compass.
	2 e.	21 4 8	71	W	Great clouds to the south.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
		°	′	″	°		
JAN.							
3	6½ e.	21	5	6	68	N E	Clear.
4	6½ m.	21	6	4	61	ditto	Ditto.
	12 n.	21	5	4	70	W N W	Ditto.
	2 e.	21	4	9	71	W	Small white clouds flying about the air.
	6½ e.	21	5	6	68½	W	Clear, only a small streak of clouds at south and south-west.
5	6½ m.	21	6	5	62	N E	Ditto.
	12 n.	21	5	6	70	W S W	Ditto.
	2 e.	21	4	9	72	W	Clouds flying to the north.
	6½ e.	21	5	6	69	W	Clouds flying to the south-east.
6	2 e.	21	4	9	72	W	Flying clouds in the north.
	6½ e.	21	5	5	70	W	Flying clouds to the south-east.
7	6½ m.	21	6	6	62½	W S W	Clouds throughout the air.
	12 n.	21	5	6	73	W	Overcast, and the sun is covered.
	1½ e.	21	5	3	72	W by N	Ditto.—A violent storm of wind, which lasted four minutes.
	2 e.	21	5	1	73	W	Clouds cover the whole air.
	6½ e.	21	5	7	69½	N	Clear, but a black streak of clouds to south and south-west.
8	6½ m.	21	6	4	64	W	Clear.
	12 n.	21	5	5	71	W	Flying clouds through the air, and the sun covered.
	2 e.	21	4	8	74½	W	Ditto.
	6½ e.	21	5	7	69½	W	Clear.
9	12 m.	21	6	3	63½	N E	Ditto.
	12 n.	21	5	3	71	S S W	Small clouds flying through the air.
	2 e.	21	4	7	73½	W N W	Ditto.—The sun covered.
	6½ e.	21	5	4	70	W	A very few small clouds in the air.
10	6½ m.	21	6	0	66	N E	All the air is overcast.
	12 n.	21	4	9	73½	ditto	Ditto.
	2 e.	21	4	6	72½	ditto	Ditto.
	6½ e.	21	5	0	72½	W	Small, but black flying clouds through the air.
11	6½ m.	21	6	1	64	N N E	Clouds flying through the horizon.
29	12 n.	21	5	5	75	S W	Flying clouds throughout the air.
	2 e.	21	5	4	74	W S W	Ditto.
30	6½ m.	21	7	3	66½	——	A little thicker at the horizon.

Months.	Hours.	Barom.			Ther.	Winds	Remarks on the Weather.
		°	′	″	°		
JAN.							
30	12. n.	21	6	4	70	N W	A little thicker at the horizon, with appearance of rain.
	2 e.	21	6	3	70	ditto	Overcast.
	6½	21	6	6	69	ditto	A little clearer, the clouds come from south-west.
31	6½ m.	21	7	4	65	——	Overcast, especially at east and north-east. the clouds coming from the north-west.
	12 n.	21	6	8	70	S S W	White clouds come from the north-east.
	2 e.	21	6	4	73	N N W	Light white clouds from the south-west.
	6½ e.	21	6	9	70	N W	Clear, except a few clouds from the north-east.
FEB.							
1	6½ m.	21	7		65	S S W	All overcast, and the sun covered.
	12. n.	21	7	0	69	ditto	Ditto.
	2 e.	21	6	5	72	N W	Ditto.
	6½ e.	21	7	0	68	N	Ditto.
2	6½ m.	21	7	2	65	N b E	Ditto.
	12 n.	21	6	8	72	N	White clouds in the south and east.
	2 e.	21	6	4	74	N W	Ditto.—But a violent wind.
	6½ e.	21	6	9	68	N N W	Clear.
3	6½ m	21	6	8	66	N N E	Ditto.
	12 n.	21	6	6	73	W	Ditto.
	2 e.	21	6	1	74	W	White clouds flying throughout the the air.
	6½ e.	21	6	4	69	N N W	Clear, but a violent storm of wind.
4	6½ m.	21	7	1	65	N	Clouds throughout the air.
	12 n.	21	7	0	72	S W	Ditto.
	2 e.	21	6	7	72½	N W	Ditto.—But the sun covered.
	6½ e.	21	7	0	70	N	Clouds flying throughout the air.
5	6½ m.	21	7	5	64	N	Clouds like a veil cover the sky.
	12. n.	21	7	0	70	N	Flying clouds throughout the air, especialy at north.
	2 e.	21	6	8	71	N W	Clouds at south south-east and south.
	6½ e.	21	7	2	68	ditto	Clouds flying through all the horizon.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
FEB.					
6	6½ m.	21 7 6	63¼	N	Small White clouds flying from north, the rest clear.
	12 n.	21 7 0	71	N	Scattered clouds.
	2 e.	21 6 8	71½	N W	Light clouds.
	6½ e.	21 7 1	68	ditto	Ditto.
7	6½ m.	21 7 4	64¼	N	White clouds at south and south-east, towards the horizon.
	12 n.	21 7 0	73	N W	White clouds at east, north, and north-east.
	2 e.	21 6 5	74	N	Clear.
	6½ e.	21 6 7	69½	N	Ditto.
8	6½ m.	21 7 2	66	N E	Ditto.
	12 n.	21 6 8	73	N	White clouds from the east, north, and south-east.
	2 e.	21 6 5	75	N W	Clear.
	6½ e.	21 7 0	70	N b W	Clear and cloudless.
9	6½ m.	21 7 3	63	N b E	Ditto.
	12 n.	21 7 0	72	N W	White clouds flying in the south and east.
	2 e	21 6 5	74	ditto	Ditto.
	6½ e.	21 7 1	69½	ditto	Clear.
10	6½ m.	21 7 4	63½	N N E	Clear and cloudless.
	12 n.	21 6 8	72	S W	Light clouds, like a veil, cover the sky.
11	12 n	21 6 7	73	N W	Clear.
	2 e	21 6 5	75	ditto	Ditto.
	6½ e.	21 6 6	70	N	Ditto.
12	12 n.	21 6 7	72	S	Small clouds in the north-east near the horizon.
	2 e.	21 6 5	75	W	White Clouds in the east.
	6½ e.	21 6 8	70	N W	Clear.
14	12 n.	21 6 8	72½	S W	Large white clouds throughout the air.
	2 e.	21 6 7	75	N W	Ditto.*
15	6 m.	21 6 8	70	S W	Clear.
	12 n.	21 6 7	72	ditto	Ditto.
	2 e.	21 6 5	75	W	White broken clouds at east, the rest clear.
16	6 m.	21 7 4	63½	N	Clear.
	12 n.	21 6 8	72¼	N W	Ditto.
	2 e.	21 6 5	75	ditto	Ditto.
	6 e.	21 6 8	70	W	Ditto.

* The entry of the 14th was the last made by Balugani. He died a few days after.—E.

Months.	Hours.	Barom.	Ther	Wind	Remarks on the Weather.
		° ′ ″	°		
FEB.					
17	6 m.	21 7 6	63½	N	All the horizon is black and covered with clouds.
	12 n.	21 7 0	71	N	White broken clouds throughout the air.
	2 e.	21 6 4	74	N	High white clouds.
	6 e.	21 6 2	69	N	Ditto.
23	6 m.	21 6 4	70	N	Ditto.
	6 e.	21 6 8	70	N W	Ditto.
26	6 m.	21 7 4	64	N	Clouds at the west and east.
	12 n.	21 6 8	73	N	A violent storm of wind from the south, which lasted five minutes.
	6 e.	21 6 6	70	N	Clouds and rain for about three quarters of an hour. Violent thunder, the clouds come from the east.
27	6 m.	21 6 6	67	N b E	It rained in the night for about an hour and a quarter.
	12 n.	21 6 5	76	N b W	Large thick clouds, but the sun shines.
	6 e.	21 6 1	71	ditto	Clouds throughout the air.
28	6 m.	21 6 1	69½	N	The heavens are covered with a light veil; it rained half an hour in the night.
	12 n.	21 6 3	70¼	N W	Ditto.—Clouds come from north-east and south-west.
	6 e	21 6 1	71	N b W	Clouds all over the sky, but most at south and west.
MAR. 1	6 m.	21 6 5	75	N	A thin veil covers the sky, but the sun shines through it.
2	6 m.	21 6 4	64	N	Flying clouds in the south.
	12 n.	21 6 1	73½	S	White flying clouds, the sun is covered.
	6 e.	21 6 2	72	S E	Ditto.
3	6 m.	21 6 4	69½	E S E	Clear.
	12. n.	21 5 8	74	S S W	Thick heavy clouds cover the whole air.
	6 e.	21 5 3	75½	W	Ditto.
4	6 m.	21 6 5	68½	S by E	It rained two hours in the night.
5	6 m.	21 6 2	65	N E	The sky is covered with a light veil.
	12. n.	21 5 8	79½	N W	Ditto.
	6 e.	21 5 4	72	W	Ditto

Months	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
MAR.		°	°		
6	6 m.	21 6 5	63	W	Thick clouds cover the air; it has rained about half an hour in the night.
	12 n.	21 5 0	77	S	Thick dark clouds, and appearance of rain.
	6 e	21 5 8	70	S	Thick clouds in the south, it has rained and hailed about an hour.
7	6 m.	21 6 3	63	W	Clear.
	12 n.	21 4 7	80	W b N	Thick clouds in the south, but clear in the zenith.
	3½ e.	21 4 4	80	W	Overcast with thick clouds in the south and west, it rained and hailed, with thunder and lightning.
	6 e.	21 5 4	80	W	Thick and flat clouds, with frequent lightning.
8	6 m.	21 6 5	63	S E	Clear, but has rained twice in the night, half an hour at a time.
	12 n.	21 5 2	81	S W	White clouds throughout the air.
	6 e.	21 5 4	71	W	Ditto.
9	6 m.	21 6 3	64	N N E	Clear.
	12 n.	21 5 2	80	W	White thin clouds, very hot in the sun.
	6 e.	21 5 6	74	N W	Clear.
10	6 m.	21 6 2	74	N N E	White thin clouds throughout the air.
	12 n.	21 5 0	82	W N W	Clear.
	6 e.	21 5 4	76	N W	Ditto.
11	6 m.	21 6 9	67¾	N b E	Sky is covered with a thin veil.
	12 n.	21 6 3	76¼	N W	Clear, only small clouds appear in the air.
12	6 m.	21 6 7	69	N	The sky is covered with a thin veil.
	12 n.	21 6	70¾	N W	Overcast with thick clouds, which come from north-east and south-west; it is likely to rain; cold and unpleasant.
	6 e.	21 6 1	71	N	Cloudy to the north and warm. It rained hard for three quarters of an hour immediately after noon.
13	6 m.	21 6 7	69¼	N	Cloudy every where.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
MAR.					
13	12 n.	21 6 3	70	N	Cloudy and cold.
	6 e.	21 6 0	71	N N W	A thick veil covers the sky, clouds in the horizon to the south.
14	6 m.	21 7 0	67¾	N	Overcast all round.
	12 n.	21 6 9	70	N W	Clouds all round, with small drops of rain.
	6 e.	21 7 0	69½	N b W	Cloudy everywhere except in the zenith.
15	6 m.	21 7 5	66½	N	A thin veil covers the sky, faint sunshine.
	12 n.	21 6 9	70¼	N W	Cloudy all round, and a few drops of rain.
	6 e.	21 7 0	69½	N b W	Cloudy every-where except in the zenith.
16	6 m.	21 7 4	65¼	N N W	Small white clouds united all over head, high wind all night.
	12 n.	21 6 9	75	N W	Large white clouds in the east.
	6 e.	21 7 0	69¼	N N W	Clear.
17	6 m.	21 6 9	56	N	Ditto.
	12 n.	21 6 7	77	N W	Ditto.
	6 e.	21 6 1	71	N b W	Cloudy, but the sun sets clear.
18	6 m.	21 7 0	65¾	N N W	A thin veil covers the sky.
	12 n.	21 6 0	77	N W	Light flying clouds, but a clear sunshine.
	6 e.	21 6 3	73	ditto	Clear all above, and without clouds, but hazy in the horizon.
19	6 m.	21 7 0	67½	N	Perfectly clear everywhere.
	12 n	21 6 4	76	N W	Cloudy, but sunshine.
	6 e.	21 6 3	72¾	ditto	Clear and serene.
20	6 m.	21 7 0	77¾	N	Clear above, but hazy in the horizon at north-east and south.
	12 n.	21 6 6	77¾	N b E	Large white flying clouds, but clear sun-shine.
	6 e.	21 6 3	73½	N N W	Clear and serene.
21	6 m.	21 6 9	70¼	N	A thin veil covers the sky.
	12 n.	21 6 4	75½	N W	Clear, but large white clouds to the south-east.
	6 e.	21 6 0	73½	ditto	Clear above, and hazy in the horizon at north-east and south.
22	6 m.	21 6 8	69	N	Overcast with small broken clouds.
	12 n.	21 6 0	77	N	Cloudy.
	6 e.	21 6 2	75	N W	Cloudy all over, and close.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather
		o	/	//	o		
MAR.							
23	6 m.	21	6	9	70¼	N	Cloudy, especially at south, close.
	12 n.	21	7	0	73¾	N N W	Large heavy white clouds, and close.
	6 e.	21	6	4	73½	ditto	Cloudy to the south, a violent shower of hail and rain which lasted 18 minutes.
24	12 n.	21	7	6	76	ditto	Cloudy and warm.
	6 e.	21	0	0	75	ditto	Ditto.
27	6 m.	21	1	3	70¼	ditto	Cloudy and close.
28	6 m.	21	0	7	70¼	ditto	Ditto. Heavy towards the south.
	12 n.	21	0	2	76¾	S	Sunshine, with large white clouds.
	6 e.	21	0	0	75¾	N E	Rains, overcast with dark clouds. The first violent lightning and thunder.
29	6 m.	21	0	4	69¼	ditto	All overcast, heavy and dark clouds come from west, loud thunder in the night.
	12 n.	21	11	9	73½	S E	Cloudy and close, wind varying to south, clouds come from north-west and west.
	2¼ n.	20	11	5	75	E	A violent blast, which lasted a few minutes. *Loud thunder* in the zenith and south, clouds, with rain, drive from east and south-west.
	4¼ e.	20	11	6	71¾	N E	It has rained till now and cleared, with the wind at north-east, thunder and cloudy, still in the south, clouds drive from north-west.
	5¼ e.	20	11	5	72¼	E	Clear sunshine, clouds fly swiftly from west.
	6 e.	21	11	5	72	N E	Lightning, clouds from west and north, close.
30	2¼ m.	21	0	0	68½	ditto	It has thundered, lightened, and rained violently all night; clouds from west and east fly moderately.
	6 m.	21	0	9	67½	E	Constant heavy rain, clouds fly all round.
	8 m.	21	1	0	69¼	N	It has ceased raining, with wind at north varying to north-west.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
MAR.		° ′ ″	°		
30	12 n.	21 0 5	74¼	S	Heavy white clouds from north-west, faint sunshine.
31	6 m.	21 0 0	67¾	N W	Cloudy, the clouds come from north-west, faint sunshine.
	12 n.	21 0 7	71	N b E	Cloudy all round, clouds come from north, dark in the east.
	6 e.	21 0 4	70¼	N N W	Cloudy, the clouds come from north and south-east.
APRIL 1	6 m.	21 1 0	68¾	E	Faint sunshine with a light veil over the sky.
	12 n.	21 0 5	72¼	N E	Cloudy and dark, stormy-like to the south.
	3¼ n.	21 0 0	72¼	N N E	A violent shower of hail which lasted nine minutes, and cleared with wind at north north-east.
	6 e.	21 0 3	71	ditto	Cloudy and close, dark and stormy-like to south.
2	6 m.	21 1 0	66½	N	Clear sunshine, with large white clouds, lightning and rain all the night.
	12 n.	21 0 9	69½	N W	Cloudy all over.
	6 e.	21 0 4	70¾	N N E	Cloudy in most parts, which fly swiftly from east and west.
3	6 m.	21 1 0	67½	ditto	Cloudy to the south and dark, clear to the northward.
	12 n.	21 0 9	72	ditto	Cloudy, they cross from west and east.
	3¼ e.	21 0 5	72½	SSE varying to NNE	Rain and cloudy all over.
	6 e.	21 0 4	70½	N N E	Cloudy throughout.
4	6 m.	21 1 5	67	N E	Clear and serene everywhere, no rain last night.
	12 n.	21 0 8	73¼	N b W var. to N N E	Cloudy, the clouds drive from east and west.
	6 e.	21 0 8	71¼	N	Cloudy, with a violent high wind, clouds cross the zenith swiftly from west.
5	6 m.	21 0 0	69½	NE b E	High wind, but clear.
	12 n.	21 0 4	73	N W	Large white clouds, but clear sunshine.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	·o		
APRIL					
5	½ e.	21 0 4	73	N	Heavy rain, thunder in the south, clouds from east and west.
	2½ e.	21 0 7	69	N W	It is all overcast, and thunders in the zenith; it has rained till now, there has been a strong wind which lasted 25 minutes.
	6 e.	21 0 7	70	N E	Clear, with a few clouds in the horizon at north and south.
6	6 m.	21 0 8	68¼	NE b E	Cloudy, high white clouds cool and fresh
	12 n.	21 0 7	73	E	loudy, dark and rainy-like in the south.
	6 e.	21 0 4	73¾	N N E	Large clouds chiefly to the north, and close.
8	3 e.	21 0 7	72¾	S E varying to	Clouds with small rain.
	6 e.	21 0 4	73¾	S S E	High light white clouds close and warm.
9	6 m.	21 1 7	71	E	Dappled sky, and faint sunshine.
	12 n.	21 1 0	73	S E	It has thundered all day, but no rain.
	6 e.	21 1 0	71¼	N E	Varying to east and north, dark and stormy-like all round.
10	6 m.	21 1 7	68¾	N N E	Cloudy all over, it rained in the night one hour.
	12 n.	21 1 4	67½	N E	Faint sun-shine, with some high white clouds; it rained half an hour in the night, and thundered.
	6 e.	21 1 3	67	N	Cloudy and stormy-like, dark clouds fly from E. to W.
11	6 m.	21 1 4	67½	N E	Faint sun-shine, with some high white clouds, it rained a little.
	12 n.	21 1 0	72¼	W S W	Heavy white clouds.
	6 e	21 1 0	71¾	N	Close clouds flying from east and west.
12	6 m.	21 1 4	67	N E	Sun-shine and cloudy by turns.
	12 n.	21 1 0	73	S E	Sun-shine, but faint large white clouds.

Months.	Hours	Barom.			Ther.	Winds.	Remarks on the Weather.
APRIL		°	′	″	°		
27	6 m.	21	1	5	67	N E	Clear and serene.
	12 n.	21	0	8	71½	N	High-wind, and clouds from north-east.
28	6 m	21	1	4	67	N E	Clear, but cold and windy.
	12 n.	21	1	7	72	S S E	Cloudy, and dark both in the south and West.
	6 e.	21	0	8	70	N	High wind since noon.
29	6 m.	21	1	7	68	N N E	Cloudy, windy, and stormy like, it begins to rain.
	12 n.	21	1	4	67	N	Cloudy to the south and north.
	6 e.	21	1	0	70	N	Wind cold bleak, but clear.
30	6 m.	21	1	7	69	N	Cloudy, it rained in the night.
	12 n.	21	0	8	73	N W	Cloudy and windy.
	6 e.	21	0	8	71	N	High wind, bleak and cool, cloudy in the south.
31	6 m.	21	0	7	70	N E	Cloudy and heavy to the south.
	12 n.	21	0	2	75¾	ditto	Rain, heavy and dark clouds to the west.
MAY 1.	6 m.	21	1	4	73½	N	Heavy rain, with intervals.
	12 n.	21	1	7	65	N N E	Cloudy in the west.
	6 e.	21	1	3	69¼	N E	Cloudy all over, it thunders in the south.
2	6 m.	21	1	6	63	S E	Cloudy, and like to rain, the clouds come from north-east.
	6 e.	21	0	9	78	N W	Cloudy and heavy in south and west.
3	6 m.	21	1	1	75	ditto	All overcast, cloudy in north-east, it rained hard in the night.
	12 n.	21	0	7	78	N N E	Cloudy, but not like rain.
	6 e.	21	0	8	74½	N E	Cloudy all over head, but high.
4	6 m.	21	0	9	63	ditto	Clear and serene, but hazy in the horizon to the S.
	12 n.	21	0	7	77	N W	Clear, and without clouds.
	6 e.	21	0	7	75½	ditto	All overcast, it lightens violently.
5	6 m.	21	1	7	69½	N E	Clear, and serene, it rained a few drops in the night.
	12 n.	21	1	4	78	N W	Clear, a few white clouds come swiftly from east.
	6 e.	21	0	6	75	ditto	Cloudy and dark in the south, clouds come from south-east and south-west.

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
		° ′ ″	°		
MAY					
6	6 m.	21 1 9	65	N E	Heavy clouds in the south.
	12 n.	21 0 8	79	N W	All overcast, clouds come from south-east and east.
	6 e.	21 0 8	70	S E	It has rained violently since three, overcast all round.
7	6 m	21 1 9	59	E	Clear, though there are still clouds to the south; it rained heavily in the night, wind varying all round from south to north.
	12 n.	21 1 2	74	N W	Cloudy to windward and to S. E. clouds fly rapidly different ways, but chiefly from south-west.
	6 e.	21 1 4	71½	ditto	Cloudy and warm, heavy to the south, lightning and small rain.
8	6 m.	21 1 0	61½	N	Clear and pleasant light, white clouds from east.
	12 n.	21 0 5	73	N E	Cloudy, clouds fly from north-west, north-east, south-west, and south.
	6 e.	21 0 6	72¼	ditto	Small rain, wind varying to south-east, south south-east, dark in the south.
10	6½ m.	21 1 7	62	E N E	Clear sun-shine, a few thin clouds to the east.
	12 n.	21 1 0	78	N E	Light clouds in the south-east.
	6 e.	21 1 7	70¾	ditto	Thin narrow streaks of red clouds to the W.
11	6 m.	21 1 7	61½	N W	Clear everywhere, and warm.
	12 n.	21 1 0	74	N b W	A heavy cloud rises in the south, light clouds at N. W.
	6 e.	21 1 0	71½	N W	It has rained small rain by intervals, but is very dark.
14	6 m.	21 1 4	63	ditto	Cloudy everywhere but in the zenith.
	12 n.	21 0 5	74	ditto	Overcast clouds come slowly from south and north.
	6 e.	21 0 6	66	N E	Clear, only a few light clouds to the south.
15	6 m.	21 1 0	66	N E	Ditto.

Months.	Hours.	Barom.			Ther.	Winds.	Remarks on the Weather.
MAY		°	″	′	°		
15	12 n.	21	0	5	78	N W	Cloudy in the south and north, but the zenith clear.
	6 e.	21	0	7	73½	S W	Cloudy all round, and likely to rain; close and warm.
16	6 m.	21	1	0	63	N E	Clear, bright sun-shine.
	12 n.	21	0	4	75½	S W	Cloudy and dark to the south and north-west.
	6 e.	21	0	0	74	E S E	Cloudy, it has rained a few drops.
19	6 m.	21	1	6	63	N W	Clear, unless in the south-east a few clouds.
	12 n.	21	0	0	72	S S E	High white clouds, but no rain.
21	6 m.	21	1	7	62	N E	Clear, with a few white clouds to the north and east.
	12 n.	21	1	0	73	N b W	Ditto.—They seem stationary.
	6 e.	21	1	1	73	NWbW	Cloudy, it lightens; thunders heavily in the south.
22	6 m.	21	1	7	62	N W	Clear and serene, but warm.
	12 n.	21	1	0	76	W	A small black cloud ascends from the east, turning round like a wheel upon its axis, quicker as it approaches the zenith.
	6 e.	21	1	0	74	S E	Heavy and cloudy; it lightens greatly.
23	6 m.	21	1	0	61	N W	Large heavy white clouds all round.
	12 n.	21	1	2	73	ditto	Cloudy and bleak.
	6 e.	21	1	3	67	ditto	Cloudy and close.
25	6 m.	21	1	0	63	ditto	Some heavy white clouds to the south-east and east, they fly swiftly, and turn as a wheel as before; at 10 o'clock heavy clouds.
	12 n.	21	0	3	75	ditto	Cloudy, the sun covered, dark in the north-west.
	6 e.	21	0	4	70	N varying to E and S	It began to rain, thunder and lighten, about three, and so continues dark everywhere.
26	6 m.	21	0	8	62	N	It has rained heavily all night, the sun at times overcast.
	12 n.	21	0	5	73	N W	Cloudy, it has rained several times this forenoon.
	6 e.	21	1	0	72	NW varying to S	It has rained heavily since two, dark and cloudy; when the

Months.	Hours.	Barom.	Ther.	Winds.	Remarks on the Weather.
MAY		° ′ ″	°		
					wind comes south, it falls calm, and then is the heaviest rains.
29	6 m.	21 1 4	63	N	High white large clouds to the west and east; it rained all night.
	12 n.	21 1 6	75	N W	Large white clouds all round the horizon.
	6 e.	21 1 4	70½	N E	Ditto.
30	6 m.	21 1 7	64	ditto	Cloudy to the south, but the sun clear and pleasant.
	12 n.	21 1 4	75	ditto	Cloudy.
	6 e.	21 1 6	70½	E N E	Cloudy in the south, but clear everywhere else.
31	6 m.	21 1 6	61½	N E	Clouds very high, they come from the east towards the zenith.
	12 n.	21 1 0	73	N W	Cloudy all round, clouds crossing from south and east, and north-west.
	6 e.	21 1 4	70	N	It has rained a few drops, and thundered.

APPENDIX

TO

BOOKS VII. AND VIII.

No. I.

Abstract of the History of Abyssinia from May 20th 1770, till the end of June 1770, made from the Narrative found in Mr Bruce's Journal.

Mr Bruce came to Gondar on February 15th 1770 He staid in the Mahometan town till Ras Michael, about the 3d or 4th of March, gave him a house belonging to Ayto Metch Adigo, 100 paces W. of Kedus Michael Church in Gondar. He left Gondar on the 4th of April 1770 for Emfras, and arrived there on the 5th, at nine in the forenoon. He dwelt there in a house belonging to Gusho, governor of Amhara, till near the middle of May, when he met the king at Langué on his expedition. The journal says that the king had with him there only about 1200 horse and 3000 foot, the rest were muleteers, women, and

* The books in which this narrative is found are minutely described in the list of journals inserted in Volume I. of this and the former edition, immediately after the life. See remarks in that list on No. I. of the journals, and No. V. of the pocket-books. In forming this abstract, I have used Mr Bruce's own words, and only omitted expletive phrases in his account.

children; and that there was a prodigious number of women.

Mr Bruce returned from Lamgué to his house at Emfras, which he left on the 18th of May, and travelled towards Dara, on his road towards the Nile. On Sunday 20th he was robbed; of which see the account by himself in Volume V. in the end of No. I. of the Appendix to Books IV. V. and VI. of the Travels.

On the 20th, it appears from that account, that Adigo, Netcho and he retreated to Karoota. I have not observed in the journal any record of how he was employed till the 2d of June. The printed account is before the reader in Vol. V. Book V. chap. 5th and 6th. His company returned towards Gondar, and entered the isle of Mitraha near it, about the last day of May. In the journal by himself there is a single entry, not connected with the rest, as follows:

"Ras Michael passed the Abay at Derra. The Monday (Monday, May 28th 1770) after his defeat at Limjour, he remained a little space from the field of battle for the night; then the next night (Tuesday 29th), at Gouzala, then at Mescalaxos, then Saroccha, from thence to the river Derma (June 1st), thence in the morning (Saturday 2d June), to Gondar."

At this date Mr Bruce's historical narrative begins with this title, "The Retreat of Michael and the Tigre.

"The 2d we returned to Gondar, having rested two days at Mitraha, a small island at 1½ miles from the shore; the church is large and in the middle of the island, which is occupied by monks, though many people have houses in it, to which they fly in time of danger, and the grandees send their gold to be hid under ground in the churches. In the church are the bodies of their kings, from Macuffa (Bacuffa), to Fasil. Their bodies are perfectly entire, white, and hard, and light, rattling in their chest. No embalming or preparation is used. They shew in particular Yasou Tallak, or the great. His skin is white like parchment. He was killed by his son, Tecla Haimanout. Here we left our quadrant. There may be about 150 houses, all single.

"On the 3d June, the Ras entered (Gondar), having marched with the utmost expedition since Thursday. That day se'nnight it was resolved to March to Tigre. On Tues-

day 5th (June), he gave all he could not carry away to the church, the fruits of 60 years extortion. On Wednesday he sent to me to go with him, alleging the risk of my life; I excused myself, as being plundered, and that the rest of my things were in Mitraha. His nephew, Guebra Maskal, was sent to plunder the hasna (treasures in the palace). He means to proceed by forced marches, as is his manner. On Wednesday he told his dream; I was present *. I retired to Koscam to the queen's house, who had always sheltered me with her protection. We feared lest in the anarchy some riot of monks, or robbery might happen. Michael on Thursday (June 7th), took the crown and the young king, and marched. The queen took the government on herself on Thursday evening, and on Friday a sacrifice was made of Michael's friends. Lika, Netcho's son, governor of Wechne, fled. The king's servants deserted him. His sword-bearer carried off the sword of state, and he was so far abandoned, for want of mules, as to leave most of the hasna to be stolen by the Tigre themselves. About 500 of the Tigre and more deserted. The Abuna, on his way from Adoua, was ordered by the Ras to return. On the 9th Gusho and Powussen were at Tedda. On the 10th they came in a private manner with scarce 300 men, inquiring for the queen at Koscam, and then retired. 11th June, several of the Greeks waited on Gusho, and were well received. On the 12th, I was at home. This day I waited on Gusho, for the first time. The Abuna sent a very submissive letter from Woggora, the Shum's house, for an escort. The letter was ordered to be read to me. Gusho does justice as vizier in his own house, but none has entered Michael's as yet. The chief person he seems to be advised by is Aito Ailo. Gusho seized and made a slave of Michael's daughter, wife of Guebra Denghel, and mother to the young queen. 13th June,—Still fear of offending Michael. Ayto Metch Adigo made governor of Wechné. This day word brought that Michael was surrounded in Waldubba, and must perish there."

After this there is no narrative for the rest of June or July, which is the very rainy season at Gondar. The weather

* That St Michael had ordered him to burn Gondar.

journal is regular from the 1st of May till the 17th, when they marched for Derra. It is interrupted till June 1st, which day they were in Mitraha. It is then regular till the 5th of June; then four days of trouble and anxiety are omitted. From the 10th June till 15th July it is complete; then ten days are omitted; from the 26th July to the time of travelling to Geesh, it is perfectly regular. Mr Bruce had a house both at Gondar and Koscam at this time; but he lived chiefly at Gondar. The narrative begins again as below:

"On the 10th August (1770), the queen was informed of Zor Woldo, a Tolumo Galla, one of the murderers of Joas, the king. On the 13th he was brought before her. The queen ordered me to stay and hear the examination. The king (Socinios), came about 12 o'clock. The queen sat in the alcove at top of the room, the king on a sofa on her right hand, but not in the line with it. On the queen's left sat Abba Salâma, on a chair which he brought with him, equal in height to the king's sofa. He was opposite to the king. His dress was a flowing silk burnoose, and white turban and veil over it, hanging loose behind on his shoulders. The Itchegué, who was present, wore a black burnoose, with gold frogs. The doors were all shut. The criminal was held by two men; he was not in irons. He confessed that he was concerned in the murder, and that he held the candle till his master Shalaka Beero, and the sons of Lika Netcho, and Nebrit Tecla, killed the king. He contradicted himself often, and was allowed to rest to recollect himself. All the great men offered to take an oath under a curse, in the hands of the Itchegué and Acabsaat, to prosecute Ras Michael and the murderers to the last. Then the prisoner was called, and after close examination by the king, and offers of mercy, he confessed that when they attempted to put the cord about the king's neck to strangle him, he resisted, and, being strong and young, shewed a disposition to defend himself, when he, Zor Woldo, struck him the first blow over the head with a bludgeon, after which he was strangled by the rest, and carried to Kedus Raphael, where he was buried a little within the door of the church-yard. When carried there he shewed where the body lay, very shallowly covered with earth; the arm was the first part that presented itself, on which was a

kind of cartouche the Abesh wear on their arm, to guard them from evil: By this it was known that it was the king, and the body covered and a tent placed over it, being the tent of the Madonna, to be raised up the pascha day, Tuesday 21st. Being again brought into the king's presence, he declared that his reward was to be a village near Tchelga, three ounces of gold, the ambai werk, or gold rings worn by the kings on their ancles, each 10 oz. weight, with all the king's apparel then on him. His death was thereon decreed. He then told how a council was held, at which were Nebrit Tecla and his sons, Shataka Becro, Lika Netcho, and his sons, Betolou, a brother of Ayto Aylo, the queen's councillor, once a Licaonte or Cadi, whose father, Tecla Girgis, was hanged for Hezekias, the usurper in the minority of Yasou, Armaxikoss shum of Koscam church, and Gusho of Amhara. These three last he said advised Ras Michael, and the others undertook to execute. Aito Ailo was declared conscious of this. The prisoner was commanded to be taken out and hanged on the Dara or Werka-tree, before the king's gate, and haste was commanded, in order to stifle the guilt of Aylo, her counsellor, who, though his father had been executed for treason, had had his estates restored, and was the richest private person in Abyssinia. He had been converted by Father Antonio, a Franciscan, in 1751, and would accept no places or posts. He was the queen's counsellor, this was the cause why he was spared, and Gusho had married Welleta Israel, the queen's daughter.

"Zor Woldo died with the greatest nonchalance. He declared, as counsellors of the king's death, Armaxicoss of Koscam, who absconded, one Nohoudie at Koscam, Lika Fasil, a Licaonte, and rich, and Lika Pedro, but chiefly Woldo Hawaryat, who had come from Tigré, with a threatening message to the queen, saying, 'Why will you make a king who can only reign two months.'

"Zor Woldo was apprehended on the 13th. He had forgot the place where Joas was buried, till it was shewn by a lame caloyeros (monk) keeper of the gate, who said that the Saturday after Pasqua* they brought in the body. They

* Joas was murdered (or, as the chronicle says, died of sickness) at

had left the foot uncovered in their haste, he put earth on it and hindered the opening of that place by others. Having heard that the king's death was decreed, he doubted not that it was the king. Zor Woldo never confessed himself the murderer, but told, when the sons of Netcho and Shalaka Becro endeavoured to put the noose about the king's neck he resisted, till he (Woldo) cut him over the head with a large crooked knife they usually wear, then sat on him till he was strangled. Woldo was first detected to be one of the murderers, from an expression of his wife, who, in a difference with her husband, in a fit of passion, cried out, 'Will you kill me as you did the king.' At the church-yard they only uncovered the arm, and saw the blood-stained cartouche. He said the king demanded them earnestly to save his life; said he would turn monk; or that they might sell him into India, or any Christian state, declaring himself innocent of any provocation."

The next narrative in the common-place book begins December 3d, 1770, when the return of Michael was believed. The journal of the excursion to Saccala, and the head of the Abawi, on which they set out from Gondar, Sunday, 28th October 1770, arrived at Gheesh Nov. 4th, and returned to Gondar, Monday, 19th Nov. was regularly kept by Balugani, and a narrative corresponding to it is found in the common-place books. The printed account agrees with these in every date and local description. A specimen of Balugani's journal is given in Vol. V. in No. I. of the Appendix to Books IV. V. and VI. of the Travels. The continuation of the public history begins Dec. 3d.

"Dec. 3d, 1770.—The town (Gondar), begins to be threatened with a famine. 4th, Fasil is at Sarocca: Confusion in the town. The king (Socinios), went to the Abuna's house. 5th Dec. A Divan held, and the king and queen (Iteghé), are reconciled to one another. 6th, Accounts of a battle fought by Aylo. 7th.—Wondy Powussen and Kasmati Ayábdar, had an audience of the queen. The former had 2000 horse and 3000 foot, the latter had 500

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midnight, on Sunday, 8th Ginbot 7261, May 14, 1769, N. S. Pascha was on the 20th April.

horse and 1000 foot. Sunday, 9th, Zena Woldo of Gojam, entered Begemder. 10th, Decamped Powussen and Ayabdar home. Abd-el-geleel arrived. Confu threatened for this, who was Abd-el-geleel's master. The sister of this Confu is married to the king (Socinios). 13th, The king went to the Abuna's house (a place of refuge) a second time. The queen scolded him. Wednesday, 19th, The queen went to Koscam: while the king was galloping his horse, she said, 'It is for a boy like that, that I have brought my life, and all of you into danger.' At Koscam the king called for bread and aquavitae, though it was the time of lent, and galloping his horse about the queen, said, 'What God intends to do with me I know not, but what men intend to do I am very well informed here in Gondar.' 24th *, Dec.—Sanud, son of the queen's brother, made Ras. News of Michael came this day; great confusion in the town, and flight to the lake Tsâna. On the 29th the queen sent express to Gusho and Aylo of Gojam, to come and take her off. The king was intoxicated. His Mahometans plundered the town. Fasil was at Ibaba: Coque Abou Barea, said to be beaten in Kuara. The magicians had advised the queen that Michael would never come from Haramat, so until the 15th Dec. when word came that he had passed the Tacazze, she was not alarmed. On the 18th, Powussen and Aylo came to take her away. On the 19th I took my leave, and staid the 20th, 21st, and 22d, at Koscam. All Gondar a desert: The Kuaragna and all fled: But no disorder. Several prisoners were brought in by Aylo, son of Shutu (Eshte is so pronounced). On the 22d, *Confu* and his Arabs entered Gondar. On the 24th, entered Ras Michael with great brutality. The Acabsaat and others executed. 27th, Still on the tree. 30th, Ayto Aylo, son of Kasmati Shutu, is proclaimed governor of Begemder. Deress Wund son of Kasmati Sanud had beaten Koq Abou Barea out of Kuara."

The narrative stops throughout January.

"Now the 5th of February, the king (Tecla-hamânout), is in his palace in great privacy. No miry (tribute or reve

* The 24th and 29th in the MS. are slips of the pen for 14 and 19, as is evident from the narrative.

nue), paid at all, but 100 loaves bread and an ox sent daily. 9th Feb. Ayto Metch Adigo, the queen's governor of Wechné, proclaimed a traitor. 15th, The enemy plunder Tangouri: Samud of Walcait, and Ayto Aylo of Tsegadé detached. Ayto Engedan, son of Kasmati Shitti, comes in. Feb. 15th, Messengers sent to administer the oath of peace for Fasil between him and the king and Ras Michael: on him depends the fate of Michael. Sunday, 23, Ayto, who did not come in till after the Ras was taken. 28th, We dread fire to the town; the enemy advance. All declare they have nothing against the king, but against Michael.

"Wednesday 13th March 1771, the Ras, King, and Abuna march out at Tedda. 14th, I was with the king; he had about or rather more than 4000 men; and in rather less confusion than in their armies. The right was attacked by Maitsha under Fasil Woldo, and by Amhara along with Wodaj Asahel. They fought bravely till two and a-half afternoon. The Abuna thundered curses on the enemy. About 900 royalists killed. The enemy have 12000 foot and 4000 horse at Correva. Great oversight they commit in not cutting us off from Gondar. 15th and 16th no fighting. Stench begins to be intolerable in the camp. Sunday 17th, we are much more straitened as being beat back from a hill by the Begemder horse in front. On Tuesday 19th, two of our parties are cut to pieces, and one is forced back; our water become quite bad. Ayto Engedan and Koq Abou Barea on Wednesday 20th join them with 4000 men. All Dembea burnt. 400 of their troops horse. On 21st, a detachment of Kella Yasous's men, about 200 in number, joined us. On Friday 22d, the Ejow Galla cut off our communication with Gondar, so we are now quite besieged, and invested on three sides, having the means of escape only towards the mountains. Sunday 24th, I requested leave of the king to return to Gondar, as the army seemed to be on the point of perishing, which he refused, alleging the danger of such a journey, and advising me to bring my tent nearer his or that of the Abuna. I chose the former, and pitched my tent near the king's on a higher place more free from stench. The king and Abuna were strictly guarded, as both were supposed to be in intelligence with the enemy, but I the Ras's stranger was allowed perfect liberty. This night we heard that

torches were intercepted which indicated a decampment by night. On this morning eight torches and some green-peas were sent from Gusho, desiring the Ras either to fight or decamp by night. He was playing at drafts, but ordered his men to descend. I got leave from the king to see this battle. An officer, much my friend, with eight horse and about 16 lances with my servants went down to the borders of the plain where we saw all distinctly. The two Billetana-guetas descended and were met by about 12000 or more horse. They placed their muskets alternately with lances and shields. The most were placed in two lines. There were many bodies or crowds of the horse of the enemy and foot among them without plan. The enemy were all in distinct bodies and attacked, killing, treading down, and then retreating. Our army was still assailed by new bodies of refreshed troops. It formed a circle. The Tigré stood firm, till night. Wodaj Asahel and Aylo Engedan remain; the first attacked five times, the last three. While engaged, a great smoke seen at a distance. We apprehend that the town is on fire. I went to the Ras's tent, and found him unconcerned: The bloody trophies were thrown before him. The Ras had seen all although his head was rarely lifted from the game. Konfu, Sanud and Ailo had been defeated we heard near Koscam, on Sunday 24th and taken. The runaways entered the town and fell to plundering, murder, and every excess. A fight commenced between the townsmen and the enemy, and these had fired the town: The enemy was expected at Abba Samuel: very alarming news to me, as all my drawings were in Gondar. On the Monday, we heard the loss of the king's army amounted to about 1800 men, and that of the enemy nearly as many. Messengers arrived this day from them, coming to bury the dead: it was refused; the Ras answered, 'the eagles will bury them.' The enemy again marched out, and offered battle, but none of the kings army shewed any inclination to descend. The enemy made no other advantage of this than burying the principal of their dead. All being quiet the rest of the day, I obtained the king's leave to go to Gondar. The stench was grown intolerable, and provisions very scarce. On Monday 25th, at night, having struck my tent and loaded it

on mules, with my servants on horseback, I set out, taking the road through the mountains, and about one in the morning rested on a small piece of plain ground on the banks of the Mogetch, having often been nearly lost in the precipices and holes of which that country is full. About a mile to our left, we saw fires, and heard a noise as of men: It was those of Woggara, Acala Mariambarea marching towards Dembea to join Heraklis and Samuel Mammo. We made little stay here, and arrived at Gondar about four in the morning, where I had the satisfaction to find my house safe. Early that morning the enemy, joined by those of Woggara, marched towards Azazo and through Dembea to join the rebels at Correva. Wednesday 27th (March) the Ras left Sarbraxa and marched towards Belessen. Famine expected. He was obliged to encamp at Wingussa on the steep side of a hill. The enemy's horse of Begemder followed him. That night 200 Lasta musqueteers deserted to Gusho. 30th, the Ras ordered the villages at Mariam-ocha to be burnt; which had a bad effect; as also three churches. On 31st Tesfos of Samen and all Woggora, 200 horse and 600 musquets, and 6000 lances, joined the enemy. On the 1st April Gusho sent the Ejou (Galla) to intercept a caravan of provisions going to the camp and to threaten Gondar with fire if more sent. The monks of Waldubba try to make peace between the king and the rebels. They are refused unless Michael return to Tigre and cease to govern the king. On the 4th he intercepted the whole baggage of Tesfos going to join Gusho. Guebra Mascal a Tigre is sent by Michael towards Gusho to lure him off to attack Michael well prepared to receive him, and so save Kefla Yasous. On the 12th Kefla Yasous foraged 500 oxen. On the 13th the country people attacked the soldiers while foraging, and killed 700 men and took 100 musquets. On the 14th a caravan of provisions was intercepted, and 400 people taken and killed on th: **** (a chasm in the narrative here) Becro, two of the late king's murderers, and Ayto Tesfos, a principal man, taken prisoner. On the other side, no person of note killed*. The 20th 21st and 22d nothing remarkable

* There seems to have been a battle between the 14th and 19th or on the 19th. Tesfos was not the rebel of that name.

occurred. On the 23d Gowedi, Kasmati Aylo of Begemder's fitauraris, went over to the enemy: the army on the point of perishing; the king having ate only roasted peas for three days: all communication with the town knocked up. It was resolved to retreat, and if possible to gain the town, and midnight was the hour fixed on to reach it. But so eager was the army to leave this quarter that as soon as it was dark they forced the Ras and leaders to decamp. Shitti Aylo, named to the province of Begemder, set fire to his tent as a signal, and fled to his uncle Gusho, taking the Abuna along with him a prisoner. An account here of the hill, the mules and horse that fell, and the confusion. The king and Ras were in front and I with them. We had not gone a mile till Gusho's fitauraris attacked our rear, but very moderately. On Monday (in the MS. Tuesday) the 22d April the whole army entered Gondar at one in the morning (Tuesday 23d at one). There was no plundering At 11 o'clock the enemy came and encamped on the Angrab and Kaha. Their proclamation had effect (their whole army about 16000). The first that deserted was Guebra Dengel Billetanagueta of Weled Gabriel of Siri* the Ras's nephew; this was his chief confident. After him followed Guebra Maskal his nephew, with all his fire arms, and one by one the rest in number about 3000. The Ras remained with two slaves, his nephew Billetanagueta Tecla, and grandson

* Ras Michael had been married to Welleta Gabriel by whom he had two sons and a daughter, Welleta Michael, mother of Welleda Gabriel of Siré. His wife seems to have been a daughter of the governor of that district. Kefla Yasous was originally a chief of Enderta, of which Antalow is the capital. Two sons of his were alive when Mr Salt, in 1805, entered Abyssinia, the one Ras Weleda Selassé, *present* Governor of Tigré, the other Billetana-gueta Menassé. Michael's pedigree was as follows:—1. Ayto Robel of Serawe. 2. Ayto Aràm. 3. Ayto Lebàsi. 4. Welleda Hawaryat. 5. Welleda Hizkias. 6. Ras Michael. He died in 1780, governor of Tigré, and was succeeded by his son or grandson Welleda Gabriel, who was killed about the year 1788 in the 32d year of his age. Mr Bruce says that Welleda Gabriel of Siré was 18 in 1769, or in the beginning of 1770, consequently he was 24 in 1780 and 32 in 1788 He governed Tigre eight years. Guebra Maskal succeeded to him, but was deposed immediately by Welleda Selasse son of Kefla Yasous of Enderta. These curious facts are from Mr Salts' excellent journal, in Vol. III. of Visc. Valentia's Travels.

Welled Gabriel. Plunderers are going about seeking the goods of the Tigré, and this lasts even to this day, Friday 26th. On Wednesday 24th, Ras Michael having dressed himself as richly as possible, in gold stuffs, and having put his house in the best order awaited death with great composure. Gusho only was admitted that day, and he questioned him about the king's murder, which he denied. On Thursday 25th, Nebrit Tecla and his sons, Shalaka Becro and his son Hannes who was Wechne Azaje were put to death at Dippabye. Nebrit Tecla, Shum of Axum, and keeper of the tables of the law, first advised the king's death. Their heads were all fixed on the tree and their privy members over them. After these executions, Wundy Wusen, at three in the evening, carried the Ras prisoner to the camp, after having plundered his house, and stripped him naked, only leaving a common cloth about him. All this was done without the consent of the king, who remained in his house under guard of Kasmati Ayabdar, uncertain what was to be done with him. The 30th April, Wundy Wusen went to Begemder, leaving Gusho Ras, but taking Michael along with him, in discontent*. Wodaj Asahel was slain at Sarbraxa. May 21st the queen returned. The king was left alone. Socinios was apprehended, and when questioned how he became king gave a bold answer. He was put into the common prison at Taka Gimb till his mother came. On the 1st of June the queen gave me a house at Koscam, which I accepted very willingly."

Mr Bruce after this date resided constantly at Koscam. In the rainy months of June, July, and August, he appears to have been very retired, low-spirited, and in indifferent health.

The remainder of the Abyssinian history is found in the large volume of Journals on two or three pages, and as to the proceedings between Gusho as Ras, and the king and queen, they are the same as in the printed work. On Sun-

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* The fate of Michael and the intentions of Powussen were unknown when Mr Bruce left Abyssinia. We now know from Mr Salt's diligent inquiries in 1805, that Powussen dismissed Michael to his province of Tigré, and strengthened himself by that policy. Michael died, Ras and Caemati of Tigré in 1780

day 20th July it was resolved to seize the Ras. August 1st, Thursday the Ras was brought prisoner to Gondar. August 14th, the king shewed himself resolved not to release Gusho. September 1st, Ayto Adigah appointed by the king governor of Amhara; and Kefla Yasous of Tigre*. Sunday 15th September, the king totally deserted; Gusho was therefore released on the 16th. On the 16th, Fasil's Galla plunder the palace, and break the mirrors in it. On the 22d of September, Powussen came to Koscam. On Friday 20th September, Fasil marched to Damot, and called off with him the four bodies of household troops, so that the king was left with not 200 men.

There are no historical notices in the journals for the period during October and November; nor till the departure from Koscam in December 1771. After that the dates are completely regular, from leaving Koscam till the arrival at Cairo, and the very same as in the printed work. From this abstract the confusion of dates in the printed work for the period from May 1770 till December 1771 may be rectified. No cause can be assigned for that confusion except the extreme indolence with which Mr Bruce composed his work, about sixteen years after the events which are the subject of it. It could answer no purpose of vanity or interest to place the fall of Michael in May rather than in March. But in the latter part of his days he seems to have viewed the numerous adventures of his active life as in a dream, not in their natural state as to time and place, but under the pleasing and arbitrary change of memory melting into imagination.

By being shut up in Gondar, at a distance from Jidda, he became in a sense dependant on the Queen and in debt to the Greeks. The king evidently wished to detain him. His health was bad all the rainy season from July to September. He was confined to bed from the 7th to the 13th of August. The journals of this period, and during September and October, are written with a feeble hand. When Fasil came towards Gondar and Koscam, as he did on the 20th of September, they were alarmed by his banditti. Opposite the date

* This nomination proved fatal to Kefla Yasous. Michael regained his power, and put this brave officer to a cruel death.—See Valentia's Travels, Vol. III. p. 178.

October 2d is this note: "The instruments all dismounted for fear of the Galla."

Mr Bruce never seems to have lived or remained any time in the Abuna's house except for a short time, of the date April 22d 1771, when he deposited his instruments and drawings there for fear of plunderers.

During the greater part of his stay in Habbesh, he lived as privately as his situation admitted. Besides Balugani, who died in February 1771, his principal servants were Michael a Greek, who returned with him to Europe, Georgis a Greek, and Solimân a Black, who accompanied him to Ras-el-feel.

No. II.

Detached Articles from the several Journals and Common-place Books, containing additional information respecting Abyssinia *.

YASOUS TALLACK (the Great) subdued Lasta, and obliged it to pay 1000 ounces of gold per annum in tribute. It continued to pay till the war between Mariam Barea and Ras Michael, when each pretending to it, it became independent, and continues so at this present day, April 1770.

Harar is four days journey from Shoa, and seven from Aussa. It is farther inland, and a plain country. The chief has the title of Emir; and is frequently at war with Amha Yasous in Shoa, who is independent. The people are all Mahometans, called Turks by the Abyssinians.

Gold is found in the Shangalla's country in small lumps, is by them put into quills, and carried to Damot fair. This, at least, was the ancient custom when these barbarians sold their gold as necessity required. Since that time they have got scales and weights, and know, in general, the value.—The Agows are the purchasers, and adulterate it with silver;

* The paragraphs marked with N. B. by the Editor.

one ounce to ten of gold, which gives it a very pale colour.

N.B. This observation is sufficiently confirmed by the colour of those links that still remain of the honorary gold chain conferred on Mr Bruce by the king of Abyssinia. These links are of a paler hue than a common guinea, rather coarsely made, and unpolished. Gold chains, called in Habbesh sunsulé, are a mark of dignity bestowed by the sovereign on the most meritorious persons in his army. It is usual to give a splendid suit of clothes at the same time, an Egyptian and Persian custom; vide Genesis, xli. 42, and Esther, viii. 15.

Wechne, in Belessen, is about 34 or 35 miles, a long day's journey from Emfras. There is paid, to maintain the royal family on the mountain, 250 ounces gold, and 730 cloths (this means webs of cotton cloth, called shuma). This is an old establishment. None are permitted to go up but the women carrying water. There was formerly a cistern, but it is now in ruins, and useless. There are near 300 persons there; and all the exiles are allowed to marry. Bacuffa escaped by help of his sister.

Extreme unction is unknown in Abyssinia; that is, the anointing with oil. However, when a person is attacked with sickness, which threatens death, he often puts on a monk's hood, as a token that, in case of recovery, he will abandon the world, and then receives the last sacrament, or rather he does so before putting it on; and it is generally the custom to distribute all his moveables to the churches, which the priests appropriate. These are traces of extreme unction. The great men often renounce the hood, and return to their former life.

N. B. The Abyssinian MS. histories are full of these instances, in which the great men, when disappointed in politics, retire to Waldubba, or other deserts, to live as monks. The distribution of goods and money made by the kings, when sick, to the churches, occurs in almost every reign. Before Yasous II. died, the Chronicle says, that he had given away every thing he had, in this way, except the crown on his head. When Joas was proclaimed, the Iteghe his grandmother wished to give a present to the poor, as usual at the begin-

ning of a reign; which she could not do, until one of the nobles supplied her with a sum of money. There were only a few derims left in the treasury.

Abyssinian Harvests. They first sow barley from the end of April to the beginning of May, or later; that is, towards the first rains. This ripens in the rains in June; and is carried off the fields into the house, that it may not rot. Then they sow fitches which likewise ripen in the rains after. In September they sow wheat, or teff, which is cut down in December; and if they have water, they sow barley, or fitches again in January. In Woggora (a very fertile province), there is seed-time, and harvest, and plowing, in every month in the year; water being easily diverted to the grounds. The rent paid to the king for the ground is one-tenth of what they reap, yet, with all this, they are all poor; for a harvest, at a medium, is about twenty after one; and they sometimes, nay, very often, scarce reap the seed. They never manure the ground; and there are great quantities of rats, and innumerable ants, that consume their corn at different, nay, at all periods of its growth. All their five harvests do not, in produce, equal one Egyptian one; and they are at five times the labour. In the several villages, living in general is very miserable; and, in general, people of consideration scarcely know any other diet than teff bread and bouza. Whether this teff is black, or white, is the whole difference between the diet of master and servant.

Abyssinian Dress. The principal part of the dress of the natives is a large cotton cloth, 24 peek (cubits in length, and one and a half in breadth, with a blue and yellow stripe round the bottom of it. This blue is not dyed; but the Surat blue cloths are unravelled and woven for this purpose; and the yellow they dye with sûf, the yellow thistle. The best for ordinary wear costs 10 salts, or 1¼ pataka, about 6s. 6d. English. It is called Kuara, as probably coming from that province. They are very beautiful and light. The other pieces of dress are breeches, which reach to their mid-thighs; and girt with a white girdle of cloth to the common people; but the better sort have red Indian cotton cloths for breeches; and silk, or worsted coloured girdles from the Levant. When they ride, they only hold their stirrups between their great and

second toes. Even the king rides bare-footed; and being used chiefly to mules, they are far inferior horsemen to the Arabs.

Price of Gold. Gold, at a medium, sells for 10 pataka each wakea; or 10 derims, salt, at a medium 8 per pataka. The piece (of salt), speaking of it identically, is called Kourman, but in estimation, or such a thing costs so many salts, they are called Amooli. These are the ordinary currency for the necessaries of life. For considerable purchases, gold is used; and there is great loss in cutting the wakea into derims, at least one in ten. The gold is got by washing the earth in water in wooden dishes. The grains, that remain behind are put into a quill, melted down, and alloyed, probably by the Shangalla; for it is pale, and is never brought to market in its first form, but melted down into small rods or ingots. In Joas's time a wakea was valued only at 8 patakas. Yasous Tanush, or the II. turned round, and reduced the Senaar Shangalla; but they are now quite independant of Habbesh. Their fair is held at Buré in Damot.

Weights and Measures. The wakea (or ounce), in Abyssinia, is considered as 10 derims, or drams, and 12 ounces make a litir, or rotol (pound). At Gondar, the capital of all Abyssinia, the wakea is 6 drams, 40 grains, Troy weight English, and divided into 10 drams of 40 grains. The small money is salt bricks, dug out of the mines at Dancali, near the myrrh country. Every wakea, in ordinary times, gives from 72 to 76 salts. In 1769, the wakea was 80 salts, and June 15th, 1771, the wakea sold at 34, but there was a great difference in the size of the bricks. These are little or not at all liable to waste, as M. Montesquieu supposes. Abyssinian gold at Mocha is 15 or 16 patakas when the Senaar gold is 22, because the Agows, &c. alloy it with silver.

At Masuah, the current money is the Venetian sequin, the pataka, or queen's dollar, and half-dollars. For small money are used grains of glass, called borjook, three of which make a chebir (Vid. Book V. Chap. ii.)

Corn sold at Masuah for four patakas the ardep, which contains about 24 measures of the country. Coffee, six rotol per pataka, sometimes ten, or even 15 rotol. Honey,

four cuba for a pataka, each cuba about two rotol, or somewhat less. Butter, 20 rotol, for 1¼ pataka, and 3½ harf. Civet, 1¾ pataka the wakea. Wax, 4 patt. the faranzola. Elephants teeth, 35 rotol for 18 patt. Water, 1½ paras the smallest jar, and 3 paras the largest. Abyssinian gold dust, 15 patt. per wakea, at Mocha. Dora, 12 measures for a pataka. The Venetian sequin goes for 2¼ patakas.

The Abyssinian gram measure is the ardeb, which, at Gondar, contains 10 measures, called Madega, each equal to 12 ounces, Cairo weight. An ardeb of gram cost 2 derims, or 2 patakas; an ardeb of teff, the same; 6 or 8 ardeb of tocusso pay an ounce (wakea) of gold, or 10 derims.

*Servants Wages at Gondar**. At Gondar a maid-servant receives 15 salts per annum, and is fed in the house. A man-servant is paid 4 pataka yearly, which correspond to four wakea, or ounces of gold, Abyssinian weight, and receives besides two loaves, or cakes of teff, for his support daily. If his master is good, he sometimes gives him a little flesh, lentils, or vetches. He is not obliged to clothe him, but he sometimes gives him a pair of trowsers, which consist of about one-fourth of a yard of white cloth

With respect to carriage, &c. three bundles of wood, which are brought from Tchagassa, three hours walking, cost a salt. The carriage of a jar, or manteca, full of wine, or honey, from Emtras, eight hours journey, pays a salt, of the weight of 3 faranzala, or so.

Thirty-three teff bread cost a salt; the loaves are about 3 lines thick, and 18 inches diameter. A pair of shoes (puntufle) cost a salt. 8¼ pecks of cloth is the least gift that can be offered in the country.

Bouza. Manner in which the Abyssinians make a kind of beer, that, in their language, is called bouza.

To make this, they use tocusso simply; but sometimes they mix it with gram (wheat), or dora, or all three together; but in ordinary tocusso is best. A jar of tocusso, or of the three sorts of gram, contains as much as is sufficient to make two loaves, that are a tenth part of the whole jar; besides which they use about half a rotol of Gheshleaves.

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* From this, to the 29th line of page 68, is a translation from the Italian of L. Balugani.

The first part of the process is to grind the tocusso, after which they take a fourth part of it, and knead it with water and leaven, as if to make bread. This they put in a jar to ferment for two days, at the end of which they make a good many thin large cakes, and dry them on the fire till they become as hard as a stone, then break them down into crumbs, and put them in a large vessel full of water, capable of holding six times the volume of the grain; or for one jar of grain, the vessel holds five of water, and one for the quantity of grain. At the same time that they put in the bruised bread, as above-mentioned, into that quantity of water, the other things should be got ready to go in also. The grain ought to be fermented for two days, then dried in the sun, and afterwards ground into meal. The Ghesh leaves are ground likewise. The remainder of the meal, or those three-fourths that were not used to make the bread, must be put into a hollow oven, over a fire, with a small quantity of water, and constantly stirred with a stick, until it become a paste; and when the water is dried up, more is put in, constantly stirring the mass until it become black like a coal. The whole so prepared, the *crumbs*, the *mass*, and *the* leaves, are put together into the large jar, and *let alone* for a day, after which it is poured off, and preserved *in jars* well stopped. At the end of seven or eight days this liquor begins to be too strong, and is best when fresh, two or three days old.

Marriage. Marriage is not considered in Abyssinia as a sacrament, yet the church ordains some rules to be observed, in order that the man and the woman may be faithful towards one another. The ordinary method of marriage among people of condition, and among those who most fear God, is the following: The man, when he resolves to marry a girl, sends some person to her father to ask his daughter in marriage. It seldom happens that she is refused; and when she is granted, the future husband is called into the girl's house, and an oath is taken reciprocally by the parties, that they will maintain due fidelity to one another. Then the father of the bride presents to the bridegroom the fortune that he will give: it consists of a particular sum of gold, some oxen, sheep, or horses, &c. according to the circumstances of the people. Then the bridegroom is obliged to find surety

for the said goods; which is some one of his friends that presents himself, and becomes answerable for him in case he should wish to dismiss his wife, and be not able, through dissipation, or otherwise, to restore all that he has gotten.

Further, at the time when they display the fortune of the bride, the husband is obliged to promise a certain sum of money, or an equivalent in effects, to his wife, in case he should chuse to abandon her, or separate himself from her. This must also be confirmed by an oath of the future husband, and of his surety. A certain time, of twenty or thirty days, is determined also by a reciprocal oath, that on the last of these they will go together to church, and receive the sacrament. When all these matters are concluded, the future spouse appoints the marriage-day, and then returns home When that day arrives, the intended husband goes again to his bride's house, where she appears, and shews him her moveables (mobiglia), or clothes; and he must promise and swear anew the fore-mentioned articles; and that he will use his wife well; never leave her without meat, or cloathing; keep her in a good house, &c. all which his surety must confirm. When this is over, the bridegroom takes his lady on his shoulders, and carries her off to his house. If it be at a distance, he does the same thing, but only goes entirely round about the bride's house; then sets her down, and returns her into it. After this ceremony, a solemn banquet takes place, consisting of raw beef and bread, and honey-wine, or hydromel, or another beverage from grain, called bouza, a sort of beer very sour and disgusting. The feast being ended, the parties mount each a mule, and ride to the bridegroom's house, where is concluded all the ceremony necessary to marriage before they live together. When they have lived together during the appointed term of twenty or thirty days, they must both appear at church, and declare before the priest that they are husband and wife, and that they are come to receive the sacrament. The priest, without more ado, celebrates mass; they communicate, and return home.

After some time, although both have sworn to live all their life faithful to one another, they take the liberty to separate; if it is the husband who wishes to get off, he, or his surety, must pay the wife that which she brought, and

likewise the sum stipulated in case of separation. If they have had children, the boys always go with the mother, even if there were but an only child; if there be no boys, she takes none of the girls. When the separation comes from the lady, the husband is liable to no restitution, provided he has been always faithful to the married state, as promised; but if it is on account of his bad conduct, or irregular life, that she forms this resolution, he is always subject to his promise and the above-mentioned articles.

It sometimes happens that the husband and wife, mutually without any cause of ill-will, agree to part; in this case, the effects brought by the wife are united with the sum stipulated by the husband; then divided into equal shares, of which the parties take each one, and return to their former places of abode.

This is the established form of those marriages which are said to be celebrated justly, and according to the church. But, with regard to inferior people, these seldom take place; in proof of which I can mention what a person of credit asserted, who had lived twenty-five years in this country. He affirmed, that in all that time he had not seen, nor known, of a marriage at the church, in the places where he lived, except one single instance. I may add to this the testimony of a priest in Tigre, who swore solemnly, that in all Addua, the capital of that province, he was the only man who was married according to the church, that is, in the forementioned manner.

The ordinary way of marrying is this: When two persons ****. Here the MS. breaks of; L. Balugani having been either interrupted, or weary of the subject. It is to be regretted, that he has not given the manner in which the bulk of a nation, very little influenced by Christinity, perform one of the most essential ceremonies in life. His account of the marriage of the church is confirmed by Gregory of Hagara-Christos, in Ludolph's Abyssinian History and Commentary.

It may be gathered from various hints in Mr Bruce's papers, that the Abyssinian peasants and soldiers marry in a few minutes. No settlement, portion, or surety, being necessary, they eat an ox, or two or three sheep raw; the favourite method of cutting pieces from them, while alive, being

preferred ; a great deal of bouza is drunk on the occasion ; dancing, shouting and various kinds of licentiousness, are practised ; if a priest be near, he sprinkles them with holy water, and repeats a hallelujah. The company join in the benediction ; and no delicacy of manners constrains either the parties or the guests. The bride does not appear abroad till about ten days after her marriage. These connections are easily dissolved ; but the king's judges, and the governors of provinces, take care that the children shall be maintained by their parents or others. Judgment is given in all matters by the civil courts ; nothing being left to the clergy but the decision of matters fixed by the canons (kanoun), or positive law of the church.

The sons of the royal family confined in Wechne are allowed to marry, but it is only by connivance. No persons of rank give their daughters to these exiles. On the other hand, the Ozoros, or princesses, are given away to every great man in the kingdom, and their marriages and divorces are scandalously frequent. The ceremony at the marriage of a prince, or princess, is as follows * : The match having been settled previously, according to the views of the court, preparations are made for the festival, which is generally held during the rainy season, while the country is secure and abandoned to pleasure. The king being seated on the throne, in the large hall of audience, the parties are introduced before him, with their respective attendants. After kissing his hand, they are all magnificently clothed in dresses of brocade, or other rich stuffs, with presents of knives, &c. corresponding to their habits. The crown is sometimes set on their heads ; they receive the benediction of the kees hatse, or king's almoner ; after which they retire clothed with the caftan, and mount horses given them by the king, on which they ride in great state, in the midst of acclamations of joy and prosperity, to the house of the bridegroom. A banquet, or dinner, is prepared there ; in the course of which, many oxen are slaughtered at the door, in order to furnish *brind*, which is served up, reeking from the animal. Deep drinking then commences ; in which the ladies and gentlemen indulge together to a degree incredible, because it is un-

* Introd. to the small MS. Chronicle.

known in Europe. These marriages are by no means permanent: Many of the Ozoros, who always rule their husbands, marry as often as they please; dissolving the marriage preceding at the dictates of convenience, or fancy. But notwithstanding the general licentiousness, there are found several faithful wives and mothers, who are content to deviate from the common example.

When any of the king's children dies, it is the custom to hang the audience-chamber with tapestry and curtains, and spread carpets on the floor. The king, having entered, sits on the throne, and the *itaaged*, a set of professed mourners of the female sex, along with the nobles and household servants, attend. One of the licaonte, a priest, reads over a list of the former kings with great solemnity, adding, after every name, "May the Lord have mercy on his soul, even to the fifth generation." The assembly reply, "Amen, ycoune, so let it be." At last he says, "Greatly may the Lord have mercy on the soul of ***, who died this day;" on which the Ozoros and their women, the mourners, the household, and the nobles, all set up a loud and general cry of lamentation, and weep for some time. If the person has died in the camp, or city, the coffin is brought before the king, but if not, he performs the ceremony without it. It is afterwards carried out with sendic and nagureet, and buried by the Betwudet, or Billetana-gueta dakakin, in the manner which shall be afterwards mentioned.

Koscam * is the richest church in Abyssinia; it is situated on the banks of Kahha, below a ruinous palace, or house, of the king. There are about 40 houses in the village, all belonging to the principal Kuaragna, the party of the queen. All the Kuaragna, Ishte, Euschus, and the rest, had their troops drawn up to attack Michael when called to Gondar by Joas, at the advice of Lubo. They designed to engage him on the Angrab, but failed completely. The residing people at Koscam, after Joas's death, were in great fear of Michael, and wore a hood, or cowl, like the monks. Gondar is 2¼ miles, perhaps 3, at its greatest length, and nowhere above a mile broad. The palace is in the centre. Below the town, on the S. W. at the conflux of

* From this to the end, wholly in the words of Mr Bruce.

the Angrab and Kahha, is the Mahometan town. These rivers inclose the town on its N. and S. sides, and join on the W. On the S. E. part of it is the church of Debra-berhan. On the N. E. is Kedus Gabriel. Two suburbs above Kedus Gabriel, is Anta Naggar, the hill, where, till Yasous's time, the Tigre, in consequence of a proclamation, were obliged to halt, and not allowed to enter Gondar.

In Abyssinia there remains not a shadow of the hospitality, which is said to be a trait in the character of barbarous nations.

They divide the day into five parts (humisi). From the twilight, which is here short, it is nagga; about nine it is called sellest, or the third hour; mid-day is kutter; three o'clock, tessaat; and sun-set, serk. They judge by the height of the sun, having neither clocks nor watches. The other hours mentioned in their books are counted 1, 2, 3, &c. after dawn, sun-rise, or sun-set.

There are two kinds of monarchy; one is absolute, where there are no written laws, but the will of the prince carried into effect by his command and force; another is, where there are laws and restraints, but these occasionally broken through. The Abyssinian government is neither of those. There are no laws: the lives of the king's subjects and their lands are *de jure* his; he is absolute and sole master of their lives and property: Yet he has no military force; this is all in the hands of the governors of provinces, whose safety lies in keeping the prince in want of every thing. It is a monstrous kind of monarchy, and to this are owing the continual wars and rebellions. While the districts were small, these were prevented; but minorities, weak reigns, &c. have united them into great ones, each of which are more than a match for the sovereign; indeed, the forty-four nagareets of Tigre united are more than a match for all Abyssinia. Damot and Agow-midre, joined to Maitsha, when they please, starve the capital, and leave the king not only without army and provisions, but even meat and clothes for himself. The Turkish and Galla wars have accelerated this state of affairs. Each of the governments have become a kind of fiefs, very rarely not granted to the family of the deceased, and that one of it most likely to be serviceable.

King's Household. The Serachmasery is Yesous Alaka* ; he anoints the king at the coronation, and has ten ounces of gold for his salary. The Licaonte vote standing before the King and the Ras, but before the Billetana-gueta dakakin, and other meconem, sitting. Four Licaonte and four azajes only vote before the king. The Palambaras was of old, in Tigre, called Lik sof. The Baal magwass goes immediately before the king, dressed as the king, and his face, as the king's, half-covered. All his actions are imputed to the king; and when he kills an enemy in fight, it is said the king killed him. Shalaka are the heads of the king's soldiers, who are called by respective names, as Ginja-bet, Werk-saccala, &c. Azaje are officers over the king's household and revenues. The servants of the Licaonte are called Firaje and Boalheg; they vote with the Licaonte, and before them in civil causes. Rakmasery is superintendant of the bread, and the Shum mes of the wine, or hydromel. The Terseimba Azaje is the judge, or, as it is called, Dabna of the Wezizir, or nobles; Dimshas is an officer under him. Of the officers called Hadug, there are two; these are the king's wakeel's, in the Abuna's house, and have one-third of his revenues.

Gera and Kanya wust Azaje. He is the person, who, in capital crimes, accuses for the king; and is always one of the Licaonte, the most remarkable for his experience and discernment. Debena-bet hants is the person that executes, by his servants, all criminals at Debabay; he has the guard there at night, and, about three in the morning, gives the signal of the approach of day to the officers of the king's house by about 50 smacks of a whip, to drive away the hyænas and beasts of prey, that come to Debabye, the place of execution, in search of carcases. He has also the right of sending expresses to Gondar of the king's victories, and brings with him the heads, pudenda, &c. of traitors, which are exposed on the tree at the place of execution; at which time the merchants, both Mahometan and Christian, give presents, which, on great occasions, amount to 10 wakeas from each Moslem, and the same from the Atary, or Christian merchants. The viceroy, or kasmati of Tigre, drinks

* A church within, or near the palace.

out of a golden cup, as keeper of the law at Axum. There are 12 nagareets in Tigre, and forty-four persons are invested with the Ras-werk.

Church affairs. The Abuna is appointed by proclamation of the king, and is deposed at his pleasure. He holds of no other person. He ordains priests and deacons within the kingdom, consecrates churches, altars (tabot), &c. His revenue was once very considerable, esteemed one-third of the revenues of the kingdom; but as those princes, who made the grants, resided in Shoa, or in the south of Tigre, the principal lands are in those provinces, adjoining to the royal residence. Now, the southern provinces are all in the hands of the Galla, as well as part of Tigre, and the governor, or Ras, has assumed the rest; so that of 400 oz. of gold once paid by Tigre, the Abuna, in my time, got only twenty-five, one-third of which went to the king's wakeel in his house. The Abuna appoints no officer, civil, or ecclesiastical; the king, or governor, does all. The king appoints officers, called Alaka, who administer in all cases the revenue of churches and convents: and this person is the judge of differences and suits among the priests and monks of his church, or fraternity, from whom lies no appeal but to the King, or to the Ras, who is understood to represent him. This Alaka is, or is not, a monk, or priest, at the king's pleasure. Of those who are called monks, are the communities of Debra Libanos, or Azazo, as it is now called, Waldubba, Werkleva, Damo, Mahabar Selasse, &c. These live in villages in these places, and reside or not as they please. The rest of that name are those who are ordained on any illness, disappointment, or advanced in life. The monks are ordained by the Itchegue, the others by any ordinary priest. Neither take any vow. The women of Waldubba are of the first kind, and all women past pleasure compose the second. There are many instances of both orders renouncing and marrying.

All persons, as well ecclesiastical as civil, are subject to the same laws, judgment, and tribunal, without exception, be the cause of whatever nature it may be. The Abuna, or Itchegue, have none of them a tribunal, nor can they take cognizance of any cause; especially the Abuna, who has, as I have said, an officer in his house appointed by the king, who punishes all persons by that authority, even those of the Abu-

na's family, without any sort of deference paid to him; and this, as appears by the judges, or king's records, is of very ancient standing. The king calls an assembly of the clergy when he pleases, generally with the advice of the Abuna, and there is none considered legal if he is not present, if in the kingdom.

Welled Hayrat (Ras Michael's son) was excommunicated for killing a refugee at the Abuna's feet, in consequence of which he confiscated the Abuna's villages in Tigre, nor was the curse ever taken off*. The Itchegue, or prior of the monks, if he be chosen a layman, must be ordained by the Abuna. He is named by the king, who nominates all superiors of monasteries. The Lika-cahanat, or chief of the priests, is ordained by the Abuna and Itchegue, who both hold a corner of a scarf put upon him. He is an inquisitor of morals among the priests, and has so much salt and cloth from each district. A priest at his ordination pays three salts to the Abuna. He comes to the house of the latter, enters, and kisses the threshold. The Abuna, sitting on a sofa at one end of the room, reads the Scriptures to himself. Then having paid his salt, the person retires and kisses the threshhold, returning without imposition of hands, or any ceremony. Old men are made priests, and young men deacons by a simple jussit. More probable accounts say, that there is only one salt paid, that the person stands at the door, while the Abuna, having made the sign of the cross, holding it in his hand, says, "I have ordained you a priest." The person then enters the room, kisses the cushion of the sofa, and retires. Many are ordained that can neither read nor write.

The Abyssinians have an office for the dead; and worship pictures of saints, even such as are not consecrated. This we had an opportunity of seeing, every time we were obliged to draw some Madonna. All those that saw it, kissed the ground before it, with their foreheads on the earth. The principal revenue of the clergy is the presents made by those who are sick, or dying.

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* The Abuna's house is a kind of sanctuary, in which criminals are protected from massacre, not from trial. They are sometimes tried there by the royal judges, or dragged from it to the tribunal.

The dress of the Acab saat is a purple burnoose, with a white turban, not unlike the Turkish Imams, or a white handkerchief hanging loose behind. The Kees hatzé is the king's official confessor, official Alaka of the church of Tecla-haimanout, and curator of the two churches of Gondar*.

The Abuna's words of absolution, in a case of excommunication, is, "Gzier ephtac," God absolve thee.

Women, after having born a son, are excluded from the church 40 days, and if a daughter, 80. The really married are those who receive the sacrament on that occasion. Persons who have been connected with any woman, are excluded from church during three days; if that connection has been promiscuous, they are excluded seven; and then even admitted to receive the sacrament. If a man, really married, is guilty with another's wife, he is not debarred a longer period. Women in the menses are not allowed to enter the church till seven days afterwards. Circumcision is performed on the eight, and baptism is celebrated on the forty-first day of the child's age. On all the fore-mentioned occasions they only come within the inner precinct, and kiss the walls and door-posts of the church. The clergy are rigid in these matters, and that is, perhaps, one of the reasons why the churches are ill-attended. It is their only duty; the monks making no scruple of confessing that they cannot enter the church, for that day they had to do with a woman, which is not attended with any impeachment.

Geography and revenue of Abyssinia.—The Iteghe from Bure in two days arrived at Metchakel, in her way to Gojam: It may be about as far as from this (Gondar) to Carroota; I suppose from 30 to 32 miles at farthest. From Metchakel to Nazarit six days easy journey; from 10 to 12 miles, I suppose, *per diem*. Gojam here belongs to Ayto Aylo, son of Ozoro Welleta Israel. The Galla are Toluma. The Galla who border on Amhara are much the worst of all the Galla, and the least worst are the Edjow east of them, bordering upon Begemder and Angot, called Gumgoul Galla. Those near Amhara are Wutchali, Woolo, Amto, and

* This entry was made in the Journal, at Koscam, in 1771. In the same place he adds, "The 29th of Sené, or 3d of our July, is their Fête de Dieu." See remarks on this in the Introduction to the Chronological table at the end of this volume.

Toluma; and these Toluma come down to the Nile, and divide Walaka and Shoa from the Nile.

Agow-midre pays yearly to the king in all about 1000 ounces of gold; and 1000 dabras of honey, each dabra about 60 rotol. It pays also about 1000 or 1500 cattle. Ancasha, Azena, Quaquera, and Banja, pay their quota in honey; Banja, gold; Metchakel, Ayamico's country, gold; Zigam, gold; no honey. Danguiah, Dengla, and Saccala, all are called Ancasha. Dengla pays chiefly cattle, and a large kind of sheep called Macoot. Butter is no part of the meery, but is brought as a present on paying the meery. After passing the Kelti, on the right, by the Bronti, is Atchefer, after that Quaquera, then Dengla, then Banja, then Metchakel. Temhua belongs to the Ras, and the revenue is paid to him. The first heavy stroke the Agow received of late years was Waragna, father of this Fasil, bringing Galla from beyond the Abay, and wasting their country entirely. He burnt the houses and churches, and led away captive the women and children. Under the mild government of Casmati Eshte they began to revive, but now again under Fasil they are very low.

Metchakel is one long day's journey, I suppose 36 miles, from Boori (Bure); it is inhabited by Galla Djawi. After these are the Basso Gallo; and the Gooderoo Galla of Kasmati Boro. His place is called Hadis Amba. These border on Gojam, Damot, and Metchakel. Gafat is not one continued country, but villages here and there. Wumbarma is Gafat. Metchakel is, however, a much more considerable country. Beyond the Nile, west of Bure, the country for a considerable distance is dry, deserted, and uninhabited, the Galla living further into the territory. All the banks are there high, steep, and unwholesome, and full of trees. These Galla are Amoro Jidda. Guesgue belongs to the Iteghe, has a nagareet, and gives the title of Kasmati. It pays 1000 cloths, 50 oxen, and 100 wakeet.

The caravans of Egypt used to go from Aidab, or Gaidab, to Dahalac, in their way to Yemen, or Jidda, the port of Mecca. Souakin is seven days south of Gaidab.

The Galla, west of the Abay, say, that they are descended of a Gin or devil, and a woman of the tribe of Koreish. They are always at war with the Nareans, Abyssinians, or

Mahometans. They reckon about 12,000 horse of Galla between the Nile and Narea. The tribes go every seventh year to the reigning house, where the council debates on the duties of government. The points agitated are, how our fathers governed, what measures are to be taken with murderers and robbers on the highways, how merchants are to be dealt with, &c. The young then declaim in favour of violence and injustice; after which the elders, five in number, are asked. These decide in favour of equity. The king is afterwards chosen by a plurality of voices.

Waragna, father of Fasil, was converted to Christianity. His father was Wusho (signifying a dog), of the western Galla, of the tribe Jimmali. He was a merchant; but being remarked to be brave in a battle Bacuffa had with these Galla, he was invested with the caftan, and made commander of several places on the frontiers of Damot.

The Djawi Galla of Damot, Gafat, and Metchakel, as also the Galla of Maitsha, came there, in the time of Yasous Tallac. The Basso, and other Galla of Gojam, were brought there by Hatze Fasil; others say his son Hannes.

Maitsha, from the place the Abay comes out of the lake to Courtohha, is 1½ day's march, at a moderate pace, 6 hours a day; from Courtohha, the hither part, to Samseen, one long day's journey; and from the same part to the Abay at Goutta, a very long day's journey, at a brisk pace.

The Shankala entrench their huts against surprise, and burn large fires. They wear a long shield, covering nearly the whole side, and five lances each, which they throw or stab with as needed. Bows and arrows are their chief weapons. They dig up gold among reddish earth, which they burn in the fire, and gather it as it runs out in small pieces like shot. They put it next into a small purse, or other sort of bag. Every individual is free to search for it. They are flat-nosed and flat-lipped, very black, best shaped in the upper parts, but with bad knees and legs.

The Bure way to Narea is W. in the country south by Amoro. The nearest way is by Gojam and Gooderoo, performed in 30 days with loaden asses, about eight or nine miles a-day.

Harar is a very large town, has five gates, and is constantly at war with Habbesh, or the Galla. The ridge of hills

continues from Masuah to Cape Gardefan. Harar, Adel, and the Gibbertis, all hate Franks and Christians. Their prince is an Imam. The road north to the Toluma Galla is nearest by Harar; to the Woolo by Aussa. There runs the large river Hawash. There is no communication with the sea at Harar, which is surrounded on the south and east by multitudes of Galla through all that country to the interior of the continent of Africa.

From the Toluma Galla, which is one day south of Amhara to Guragne, is seven days of an ass from morning to night, I suppose 15 to 16 miles per day. From Guragne to Narea, 4 days; in their way they pass the Bashilo, but not the Kibbee, which passes through Nare.. The Bashillo falls into the Abay before they pass Angheree, and they meet with it past Gerramidre before they enter Guragne.

From Raheeda to Aussa, 5 or 6 days. From Aussa to Harar, 6 days moderate journey, in 4 a strong man can accomplish it. From Raheeda to the Woolo, 15 days; from these to Amhara, 3 days. From Raheeda to Woolo all the country is plain: the journey is performed with camels, I suppose 40 miles per day. They carry water with them in girbas, and at one time are three or four days without any other supply. Aussa is now no separate kingdom, but dependant on Harar; the race of people was from Harar, and therefore they are not subject to strangers. They are called Mellassua, and still preserve their language, which is the same with that of the Gibbertis. They count up 317 kings. From this city was Mahomet Gragne. The whole country is Adel; from Zeila to Harar is 8 days journey; but Zeila is now little inhabited, on account of the faithlessness of the natives in robbing the Jelalib. Soomal is governed by a chief at peace with Adel. Harar, the capital of Adel, has 99 villages, all governed each by a vizir, and pay tribute.

Goatta is not in Damot, though depending on it. A small peaked hill, pointed with rock, is called Geesh, or Gutch. Southward, scarce a quarter of a mile from the fountains of the Nile, the plain ends in a precipice, planted with very tall sambuca, and other trees. In this is a cavern called Washa, which they say communicates with the fountains, and that when it rains violently the water overflows and comes in hither. The Shum Kella Abay told me, that in the constant

rains of Naasse and Hamlie, it never overflows at the springs, nor do the fountains seem larger. He remembered the accession of Hatze Yasous to the throne, and was about 80 years old. The east side of the Nile is less barren than the west side. Aformasha is not barren.

Singular custom. The Betwudet (in Habesh), upon the death of any Wiziro, is obliged to pay the expences of the ceremony, called Misle, which amounts to 100 oxen, 3000 loaves of wheat bread, 20 jars hydromel, wood, &c. the whole about 60 ounces of gold. The ceremony is this: A sort of figure, resembling the defunct, is placed upon horseback, in his usual dress, and so carried in procession about the outer court of the palace, with the royal standard (sendick) carried before it, and the nagareet beating. This is called, in this country, "burying with sendick and nagareet;" for which the Betwudet has 1200 ardeb of wheat yearly out of the Attekolla.

The route of the Islam merchants, S. is by two ways, with loaden asses, 8 or 9 miles per day. The way by Gojam is performed in 50 days to Sebon, and thence for other 10 to Nuea. The Kibby, or Zebee, rises in Narea. Coffee of different kinds grows there in abundance, and the Galla feed on it. They use the lex talionis, but their internal justice is strict. They are very scrupulous of oaths: Wanke Laftan, by heaven and earth, is one of the most solemn. There are three races of Galla, the Guangoul in Angot, north-east of Begemder; Mahomet Ali, another further west than the Guangoul, towards Amhara; and a third, Mahomet, brother of Lubo, west of Amhara. The rest are pagans; but when converted are said to be better Christians than the native Abyssinians.

Malabar Selasse is four commodious days journey from Gondar, in the line of Tchemmera and Tenkel. Near it pass the rivers Shimfa and Gandova, the last of which has several very high cataracts; it joins to the Shankala, and is about two days journey from Tchemmera. Both rivers fall into the Nile.

The river Bashilo separates Amhara from Begemder; the Mashilla, a river of Gojam, and the river Nefasse, fall into the Nile at the same place. In the country of the Galla west of Damot, across or west of the Abay, there is little

water, and near the banks of the river the country is desert.

Damot pays 800 ounces (wakea) of gold; formerly 1000. Gojam 80 ounces, and 70 mules. Lasta 1000 ounces; these last years it pays no more, being at present annexed to Begemder. Tigre pays 400 ounces in salt and cotton cloths. Walcait 1500 ounces in cotton cloths.

The latitude of Adderghey is 13° 24′ 56″; of Macara, on Lamalmon, 13° 6′ 8″; of Gondar, 12° 34′ 30″; of Emfras, 12° 12′ 38″; of the fountains, 10° 58′ 58″.

Note at Loheia —The Arabs are fond of music, especially vocal; for they have no instruments but a kind of flute, of the size of a German flute, which gives a wild and not unmelodious sound, and the cymbal or drum, with ten pieces fixed to its sides, which is chiefly used in cadence in dancing, or for symphonies. Their vocal music, or songs, are upon first hearing disagreeable; but it rarely happens that one who has a good ear is not soon fond of them. They are all upon love; at least I never heard any that had war for their subject; some have religion, and are sung by their Shekhs, or saints. The former have effects upon their hearers nearly as extravagant as the ancient music produced. They have no music in parts, and have absolutely no idea of harmonical composition.

No. III.

Extracts from the Journals of the Route from Koscam in Abyssinia to Assouan in Egypt, by the way of Sennaar *

THURSDAY, 26th Dec. 1771. At half-past one o'clock, P. M. left Koscam. At 20 minutes past 9, Thursday, Jan. 2d, entered Tcherkin. At Tcherkin the Werk Hajila comes from S. E. almost parallel to the Bedoui, which it joins, and falls into the Angrab. On the Werk Hajila, the tota (apes) are in great plenty, and guinea-fowls, called in Amharic Ziggary, and by the Arabs here Jedada. Maize is here called Mashilla. The sun, by the thermometer, sometimes exceeded 130°, yet we are capable of taking all kinds of exercise. Guesgue belongs to the Iteghe; is a shumet with a nagareet; pays 1000 cloths, 30 oxen, and 100 wakea of gold. Debra

* The particulars contained in this number are by no means intended to give a complete view of the Journals; they are merely occasional extracts from them, where any thing appeared curious, or useful to geography. Besides a perpetual weather-journal, the author's observations, written on many large stripes of paper, from his departure from Koscam till his arrival at Cairo, exhibit, in a condensed form, the whole body of information given in his printed narrative. Many short dissertations, on articles of natural history, the tropical rains, the antiquities of Egypt, Nubia, and Ethiopia, &c, are interspersed with the remarks of the day as the subjects occurred to his mind. It appears from the notes, that most of the theoretical parts of his printed work were sketched during his lonely and dangerous residence at Sennaar. The geographical reports, which he received from the natives on his way, are here given exactly in his own words; but the truth of them depends on the accuracy of his informers.

Haria is N. of this two days; the Angrab separates it from Confu at Tcherkin, and is about 18 or 20 miles distance. Tcherkin, Mond. 6th Jan. Altitude of the sun's upper limb, 54° 38′ 25″; at noon, the thermometer in the sun, 117°; at 3 o'clock, 117° Tuesday. Jan. 7th. Altitude of the sun's upper limb at Tcherkin, 54° 45′ 30″. Tcherkin, Jan. 9th, In the outer air, ¼ before 6 o'clock, thermom. 63°, calm; at 6¼ sunrise, 63°; at 8 o'clock, in the sun, 117° dead calm in the sun; at 8½, 120°; at 10¼, 135½, small cooling breeze; it is no ways uneasily hot; at 11, 139°. Wind changed to the N. W. And cooling breezes. We find it no ways so hot in the sun as this would seem to indicate, but can hunt and take exercise with thin cotton cloths like flannel. In the shade cool. 11¼ o'clock, thermometer 131½°; wind N.W. to W. N. W. in gusts and varying. At 12, the same. After 2. P. M. fresh, and the thermometer falling. It is now 133½° perfectly clear. 6 P. M. the same. In the shade, at 10¼, 80°; Wind S.W. by gusts. Mean of 13° 7′ 24″ and 13° 7′ 47″; the latitudes resulting from the observations, 13° 7′ 35″ the lat. of Tcherkin.

Tuesday, January 14, left Tcherkin. Saturday, 18th January, left Sancaho; in the way crossed the Bedowi. To-cur Oha runs from the S.E. then from N. E. to S. W. till it join the Guangue: It rises in the mountains of Awass. From Kautlis is Guanjook, bears W. by S. 1½ miles. Kuara S.S. W. 36 miles. Edin, S. by W. 28 miles. Monday, 20th, Guanjook. The Angrab falls into the Tacazze in Derkin. The Guangue joins the Nile in Atbara. It rises in Nara, not far from Tchelga. Wednesday, 22d January, arrive at Kurko comoot, the chief village of Ras el Feel.

Geographical note.—From Horeucamoot to the city of Sheba, Sheikh of the Ganjar, 1½ days, footman's pace, and moderate walking, about 2 miles an hour, or from 28 to 30 miles. It is called Cashumo by the Ganjar, and Dendy Kolla by the Abyssinians.

The Gandova falls into the river at Defitess Amba, about 4 miles S. W. of Guanjook; it rises near Tchelga. The river Shimfa, by the Arabs called Rahad, is the boundary of Kuara, with Sennaar to the south. It winds most of any river in the country. The Angrab falls into the Guangue or Atbara. The peninsula formed by the Angrab and Guan-

gue is Beja Proper, but the Arabic books call all between the east of the Tacazze and the Red Sea, Beja. Still farther north, opposite Teawa, the Siteet or Sisseet, of the Arabs, but the Tacazze of the inhabitants of the eastern bank and the Abyssinians, falls into the Guangue in Derkin, and is then called the Atbara, which joins the Nile in the Barabra at Takaki, where it forms Meroe. Derkin, then, is north of Beja, and on the west of the Atbara. On the east side of the river is Welled Ali, and north of Welled Ali is Taka, and lower still to the north is Mendera, and Gooz, which is on the river. Taka is five days N. by E. or N. N. E. from Welled Ali, and 9 days from Suaken; days of an Arab on a camel without baggage; 15 good days journey by a caravan. At Taka the Mareb comes from Abyssinia, and spreads itself into the flat country, overflowing it for 40 days, as the Nile does Egypt. It is here the Taka sow their dora. It is false what geographers say, that the Mareb falls into the miry fields of Derkin; the Atbara is between it and the fields of Derkin, which do not deserve the epithet of miry.

Kurkocomoot, January 26. The Guangue, running north, divides Ganjook from Ras el Feel. It is full of crocodiles and gomari, called here, Eshint. The people eat all these, as also the flesh of the buffalo. They prefer that of gomari and ziraffe (camelopardalis) in particular. Of the tails of both are made whips, called Korbatit. Found here the altitude of the sun's upper limb, 58° 29' 15", and the latitude 13° 1' 33"; so we are much more west than north of Gondar. Ras el Feel has a nagareet, and is the residence of a kasmati. The language is Arabic, though different from that of Cairo or Barbary. The Amharic is still understood. The gomari is here called eshint; the crocodile, temsah; the partridge, jimmer; the zigary, or ferach Habbesh, jedada. It is very hot by day, and cold by night.

The inhabitants are black, but not of the black kind. As the most of them are Tacarna, that is, natives of Darfoor, we may attribute it to intermarriage. The inhabitants are of four kinds; 1st, Tucorori from Fowar; these are the most considerable. 2d, Ganjar, or Kuara Arabs: they have a large village, about two miles from this to the S. W. called Noor. 3d, Gibbertis, or natives of this place, or Habash, &c. 4th, A mixture of Atbarans, as Gehama, Davema, Hamran, Welled Ali, or Nile, who are Davema. They bring

camels, neat, auraris horns, butter, &c. to the market, which is considerable, for returns of horses, mashilla, dora, and the like. The Mahometans from Tchelga, Tcherkin, and Debda, bring coffee, civet, and cloths, and purchase cotton.

On Monday, 27th January, went a-hunting. The river is the largest, after the Tacazze, in Atbara, and the Nile, in Habbesh. The Daveina hunters are called Agageers, and hunting Ganisse or Agre. There are gomari in the Birket el Kantoush, where the river turns north. The banks are low and easy, with doom trees upon them, now in fruit, but without leaves. This river runs nearly north and south, and falls into the Tacazze in Derkin, some say Barabra. Before its junction with the Tacazze on this side, the west of the Tacazze is Beja; a mixture of Arabs, of which are the Welled Ali, then Daveina; after the Daveina, the Refaa; from Haseeb, still farther south, the Ganjar, that border on the Shangalla, who reach to the Abay and Wumbarea, on the confines of Damot. The river Angrab is called by the Arabs, Basalam, and the Tacazze, Sitteet; the Shimfa they call Rahad; it passes below Beyla. Beyond the Welled Hamran Arabs, on the other side of the Tacazze, are the Hallanga, or Taka; after the Taka, near Suaken, are the Hadendowa, &c. From Ras el Feel to the Hallanga, seven moderate days journey of a camel; from thence to Suaken, fourteen long days from morning to night, sometimes all night, for want of water. The Dobena, or Baasa, are four days from the Hamran, nearer Habbesh, but on the east of the Tacazze. The Refaa and Ganjar are friends and allies. The Daveina and Nile are of the same origin. The Refaa and Jehaina are of the same cast; that is, both Jehaina, originally from Arabia Deserta, to the north-east of Imbo.

There are two roads from Ras el Feel to Sennaar. One from this to Beyla, west, and one following the course of the Guangue, that is N. by W. to N. N. W. by Teawa and Rashid and Engedaima. From Sennaar, south, are the Nuba, pagans, along the river, till they reach the Shangalla of Agow-midre. The principal place is Fazuelo, whence comes the gold. Fowr, or Foor, is west of Sennaar; and still farther west is Sele; still further, Bagirma; the first seven days, the latter eight from Sele; from Sele to Kotkot*, about the

* The passage is obscure. The word Kotkot is written once Kolkol.

same distance from hence to Burno. Foor has but one principal town; the rest is plain, and the access from Riff full of deep moving sands, without water. The road from Foor joins that of Sennaar to Messr (Egypt) at Selyma. A very considerable kofla comes from Foor, called that of Dar Foor. Foor, Bagirma, Sefe, Kotkot, and Burnó, are all Tucorori, or Tocarna, each having a different language. Foor is a plentiful country in all sorts of provisions, and abounds in cattle and camels. The Tucarna are more addicted to wandering than any other nation; they are spread all over Africa and Asia; they are rigid Mahometans: all know something of reading, and are great pretenders to sorcery. The poor, in their pilgrimage to Mecca, subsist on writing charms for other credulous Mahometans, against jealousy and fear, to be successful in love, against musket balls, &c. &c. The rains at Foor are in the same season as in Habbesh; so are they in Sennaar. The Foor are more civilized than the other blacks of Soudan, and are esteemed also more treacherous; they are fond of strangers, which is not the case with other African nations.

Teawa is the seat of the Shekh of Atbara, Fedaile. Between the Angrab and Tacazze is Derkin; then, lower down, Beja, which is a peninsula of the two rivers. The Beja are a mixture of different nations; they live in houses, not in tents. On the east side of the Tacazze are the Welled Ali Arabs; and three days lower, the Taka, or Elhanga, who reach from the river three days to N.W.

Resided at Ras el Feel from 22d January till March 15th, one month and twenty-four days.

Arrived at Teawa, March 23d.

From Atbara to the river Guangue, due east, is about 14 or 16 miles. Mendera, from Teawa, is somewhat nearer than to Ras el Feel, due north, three days, but not complete, and no water save at Mendera; the road being a perfect plain, without trees, excepting in a few places.

The Funge were originally Shankala, or Hamidje; being those who live along the Nile to the borders of Abesh. The Nuba are the Shankala west of Sennaar, who live on the river Abiad. The Funge at Sennaar lose the flat nose, but retain their blackness. The Arabs of Mendera are called Welled Reckeb; it was once a very considerable place, but

was reduced by famine, and is now abandoned. The camels of the Refaa, near Haseeb, on the Rahad and Dender, are black; those of Atbara are white.

The Sultan of Darfoor (Teyrab) is of the Arabs Refaa. All Barbar, to the west, is full of Arabs, that came from Arabia after the conquest of Egypt; but they are under severer government than those of Atbara. They all preserve their colour, though in Nigritia. The disease of the worms, to which the Abyssinians are so subject, extends as far north as Sennaar; but to the west, as far as Darfoor and Borno, though under the same latitudes and circumstances, it is not known. The cause of this disease is also unknown, if it be not the eating of raw flesh, common in Sennaar and Abyssinia, but not in the west, or the bread; for in Gondar they eat teff and tocusso; in Sennaar and the low parts of Atbara, dora, or Indian corn; but in Darfoor, &c. and the west, they eat wheat. Strangers in Abesh are not subject to these worms, even though they eat teff there and maize. In Atbara and Sennaar, on the contrary, the natives of those countries, be their diet what it will, are constantly for a time molested with them. The horses in Habbesh are likewise subject to this disease. The Sennaar people use senna instead of kusso; but kusso is sold in Cairo for the use of the Abyssinian and Nubian slaves and others, brought in quantities yearly from these countries by Jidda and Sennaar. The intermissions of taking this drug is attended with perpetual fluxes and bloody stools, and loss of appetite, with a smart continued fever; so that the case is scarcely distinguishable at first from dysentery, unless by people acquainted with the diseases of those countries. These often end in death, from the same causes as in the bloody flux, viz. inflammation, and mortification of the intestines, &c.

Extract from the weather journal at Teawa, from Monday April 6th, to Wednesday, 15th.—Monday, 6th April, thermometer at noon, 130½°, wind N. 1. cloudless, and not very hot. Tuesday 7th, at noon, 127°, wind N. 1. cloudy, united flaky clouds, but clear in the horizon to the N. hot. Wednesday 8th, noon, 120°, a few light clouds streaked in the sky. Thursday 9th, noon, 129°, wind N. hazy; streaky clouds in the horizon. Friday 10th, noon, 124°, wind N.E. 1. cloudy

in the horizon. At one, P.M. 124°, wind N.E. 1. cloudy in the horizon, with streaks. Saturday 11th, noon, 110°, wind N.E. cloudless, a haze of dust. Sunday 12th, thermometer at noon, 126°, wind N. perfectly clear. At one P.M. 124°, wind N. E. A violent gust of wind some minutes ago came from the E. It has since become calm. At two P.M. thermometer 116°, wind W. by N. cloudless; the wind comes in gusts and fades away. Three o'clock, thermometer 116°, wind W. by N. 1 cloudless.

There has just now passed us a whirlwind from N. E. to S.W. with great noise. It was high in the air, in an undetermined form, like white thin clouds, flying part N. and part S. In the middle it was about a foot and a half thick, like a stream of smoke from a chimney; at the part next the earth it was in the shape of a funnel; and at its broadest part, where it whirled the dust, it might be about seven or nine feet thick, and not above half a foot where it touched the ground. It passed with a great noise along the plain, though slowly, and I suppose a quarter of a mile in eight minutes, frequently growing larger and smaller in the part near the ground, and increasing its force and velocity in whirling. When the white cloud above dispersed, it ceased immediately. The upper part was not dust, but cloud. Kites passing the cloudy part did not seem affected, though it overthrew houses and my tent as it passed, and violently moved the earth and every shrub within its vortex. Thermometer in the sun, at 4 evening, 116°; at 8 P. M. 84°, wind calm, cloudless, moon and star light. Monday 13th, noon, thermometer 133½°, dead calm; at 8 at night 92°, wind W. 1., cloudless, moon and star light. Tuesday 14th, noon, 132°, wind N. cloudless. Wednesday 15th noon, 128°, wind N. E. gusty.

Between the Nile and the Bahar el Aice is the country of gold. It is south from Sennaar, and west from Haseeb. This is properly the country of the Funge.

Whirlwinds raising the sands are frequent in the way of the caravans to Darfoor, about the equinox, and before the rains. They sometimes cover whole caravans. In Atbara they are daily, in this part at least; but it being fixed black earth, they are of no consequence. The means which Providence

makes use of, to make these places habitable, are covering them with clouds five months, and deluging them with rains; elevating them high above others, as in Abyssinia, where calms are frequent, or rather constant, and refreshing them with winds, which never cease blowing in the low levels, as those of Atbara and the kingdom of Sennaar, where the wind always increases as the sun increases in height, and constantly makes the thermometer fall after 10 o'clock, which is here the hottest, because the calm lasts till then nearly, and recommences about 4 in the evening. The whirlwinds in the morning come from the N. E. and proceed to the S. W., those in the afternoon from N. W. to S. E.; the morning ones are not so violent as the evening ones.

The Refaa Shekh was driven from Kuara by the Abyssinians. The Arabs Nile joined Yasous when he made his expedition to Derkin. He gave a sword and brass nagareet to their Shekh. The Abd Gin Arabs also joined him, but revolted to Sennaar afterwards.

Left Teawa, April 18th, having been delayed 26 days there. Arrived at Beyla, the 19th; at Baherie, the 22d; at the Cohala Arabs, the 23d; among the Nuba villages, the 25th; at Basboch, the 26th; on Wednesday, the 29th April, entered Sennaar.

From Teawa to Beyla is about 31¼ miles, by esteem 28; from Beyla to Baharie, 5¾ hours; from Baharie, to the Rahad, 5¾; from the Rahad to the Cohala, 2¼ hours; in all equal to 12 hours, at 1¾ miles, the greatest rate *per horam* of a loaded camel.

At Beyla, Tuesday 21st, arrived accounts of Shekh Yasine having retaken his property, carried off on the 18th by the Ganjar of Kuara; and of his returning to the Godevi, and leaving Ras el Feel desert. The Dender runs nearly north and south, and falls into the Nile, about 16 miles below Sennaar; the place Gragreb or Geragreel. The Rahad winds exceedingly, and falls into the Nile at Habharrass, 2¼ days, 38 miles or so, below or north of Sennaar. The Dender stands at present in pools, like the Rahad. This latter is larger than the Severn at Bristol-wells; the water of both is stagnant and bad, corrupted by the Arabs and their cattle. The sands of the Dender are so hot, that we cannot tread

on them. On the evening of the 25th (since our leaving the Dender, it has been rather cloudy, and violent lightnings in the evenings), it blew a violent storm, with whirlwind and rain, killed two camels, and covered us with dust. Lodged in a Nuba village all night. The wind came from the N.W. with violent lightning, and threw us from our mules.

Sennaar.

The Nile at Basboch is like or greater than the Thames at Richmond; it is called the Bahar azergue; has fine white sand on its banks; the country seems flat and bare *; the sky is blue, and the water clear, in some places not above two feet deep.

The king of Sennaar commands both sides of the Nile, all the way up to near Agow-midre. There are Shangalla, and thence comes the gold. The country on both sides of the river produces this metal; and they are governed by Shekhs appointed by the king of Sennaar, or rather the vizir. These are Shangalla, or natives of the place, relations of the king and great men at court; and are, as they are called, Funge, that is, Shangalla converted to Islamism, of the country whence those Shangalla came who drove out the Arabs under Wed Ageeb. Of these the government is composed. The common Shilook, or troops of the king, are mostly Pagans even yet, and have their priests. They worship a tree, &c. as God. Between the Nile, or Azergue, and the Abiad, or Bahar el Aice, is another sort of Nuba, and this is Nuba Proper, and the Gold Country. Also, beyond the Bahar el Aice, in the same parallel, are likewise gold, ivory, &c. and the inhabitants are also Nuba, Pagans, and their language is a distinct one. From these two provinces are all the riches of the kingdom; and they are both in the hands of the two brothers, Adelan, and Abd el Calec, who have killed two kings, and keep the third without forces, or revenue.

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* Sennaar is in the ancient Arabic of Chaldea the name for a plain country. The plain of Shinâr is on the Euphrates; the true pronunciation is Shenâar or Senawr, in English orthography.—E.

At Semaar the Nile has a level bank with the country, after its steep rugged banks to the south. We have obtained an audience of Ismain. We gave him letters from the Sherriffe of Mecca and Hatze Teela Hamanout, for all which he shewed great outward respect, and gave us a large house.

Information. From Chendi to Barbara, four days journey; from that to Takaki, five; from Chandi to Chaigi, three days; from Chaigi to Dongola, four; about fourteen miles per day. The Nile between Takaki and Dongola turns W. that is, by Korto; leaving the Nile on the right but going to E. of the river along it, ten days, about 105 miles.

Information, (June 19.) From Semaar to Taka nine days; from Taka to Goze, four; from Goze (the sands) to Souaken fourteen days, close travelling, I suppose, from fourteen to sixteen miles per day. Two days from Goze the road is in a level between the mountains, as between Riffe and Cosseir, or Masuah and Tarenta; the road plain, but through vallies, between high mountains. The language is called Ajemma, Taka Halianga Hadendowee. All speak this language on to Masuah. At Souakin there is only well-water, but in great plenty and good. The wells are of very ancient workmanship. It is four days from Suaken to Hageeg. West of the Hageeg are the Habab, a kingdom of ignorant Christians. From Ageeb to Masuah seven days, and the inhabitants Moors, or Arabs, called Welled Mousa The Abalde speak the Barbara language, *i. e.* that of the country on the confines of the rains; this is also the language of Dongola and the neighbouring spots. The language of Suaken and that country is Beja, as is the name of the people in old Arabic MSS. it is the same as Bekla, a name extended to all that dwell within the limits of the rains. The principal Beja, at present, are the Taka Hadindowee. The Marea and Halianga all speak this language, which, being called Ajemia, has been wrongfully interpreted by some, Persians. It means the language of Ajam, or Azamia, *i. e.* the west coast of the Red Sea, within the rains. This language reaches Masuah, where corrupted Tigre or Geez begins.

Bejan words. Gold, damasa; sun, toween; water, aijam; the Nile, Neel; or sometimes, with the Arabs, Bahar el azergue; (at Souaken) father, baloc; sister, takatoc; brother, sanoc; good-morrow, shoom moona; a dog, sirre.

The Mek of Sennaar pretends to be descended from the noble Arab tribe, Beni Ommai; but his woolly hair, and black flat features, shew him to be a Shangalla; the particular name, Shilook. These inhabit the large islands in the river El Aice; a river, which, rising in the country south of Narea, is supplied with perpetual rains, which fall under and within four degrees of the line; and, therefore, it is always full, and never diminishes as the Nile does, in the latitude of whose fountain the rains prevail only at stated seasons.

The name of Shankala, given to the *true* blacks in Abyssinia, is not known in the kingdom of Sennaar, though in features and complexion they are the same people. The river El Aice is twice as broad as the Nile, and very deep in all the course of it*. Before it joins the Nile are many islands; in these dwell the Shilook, who rob in barks up the whole of it. The other blacks come from Guba, Nuba, and Fazuclo: three southern provinces which depend on Sennaar. Both Guba and Nuba are towards the confines of Kaara, in the low and hot country in the S. E. of that province. Fazuclo is a country lying between the Nile and the river Abiad. In all these countries is gold in abundance found in torrents after rains, at the roots of the trees, or their fibres.

The Mek and his friends sell their wives to the best bidder. As the people of Sennaar are a mixture of negro men and Arab women, they cannot be said to have any characteristic features. This (June, 1772) is the 1186 year of the Hegira, as counted at Sennaar; but it should seem by the Sennaar accounts, that the first of the Hegira should be A.D. 648, rather than A. D. 622.

Upon the Babar el Aice is the town El Ais, three days journey west of Sennaar; it the greatest command in the gift of the Mek. The Tacazze, or Atbara, joins the Nile four days on the other side of Shendi, or three days on the side of Berber. The place is called Magiran, which, in Arabic, signifies the junction. In summer it is so shallow you

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* The reader will remark the force of this information, "The river El Aice (the White River), is twice as broad as the *Nile*," and below, "the Abiad river is three times as big as the Nile," &c. Abiad and Aisa or Aice, are common terms for white.—E.

pass it on foot, the water taking you up only mid-leg. All the rivers in these countries fail when the sun goes south of the Line, however abundant and full they were before; and were it not for the Abiad, which rises near the Line, and whose inundation is perpetual from its enjoying the rains of both rainy seasons, the Nile itself would be eight months in the year dry, and at no time arrive across the desert in so much fulness as to answer any purposes of agriculture in Egypt. The Abiad river is three times as big as the Nile. I always believe it to be the Kibbee of the Nareans or Galla, the Zebee of the Jesuits, the Yabous of the Fazuclans, being the boundary of that province to the westward *.

Sennaar (Aug. 2. 1772.) The Shillook are very numerous. There are three principal islands. These are scarcely a day's journey above the river El Aice. They leave these islands in the rainy time, and repair to them in the dry season; and then they ravage and plunder all the neighbourhood. There are several other islands farther up. Their towns are on the west side of the river, and very numerous. The river El Aice is a very deep running river; it scarcely can be seen to run. It rises in latitudes of perpetual rain.

Information (July, 1772.) Darfur, called Konjara, is seven days from Lebeit, or Kordofan, without water, and all sand. Darfoor has high mountains, on which the snow lies for months. South of Darfoor are the Shankala, or Nuba, of Dar firteet; whose inhabitants, as also those of Dyre and Tegla, go perfectly naked, without any piece of covering, both sexes and ages. They are Pagans, and their country produces gold.

Here (Sennaar) in July it rains at night; seldom by day. It is now cloudy always, and is the season in Abyssinia of violent rains.

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* In the copious mass of information respecting the countries all around Sennaar, the reader will find very full details on many of the places which are mentioned in the routes communicated to Mr Browne at Darfur. The language and orthography of Mr Bruce is most strictly retained in these extracts. From them we may judge of the size and importance of the western branch of the Nile; which, however large, was considered as the direct river of Egypt by no person with whom the author conversed, from Saccala to Syene.—E.

July 20. The Nile would fail, were it not for the never-failing Abiad, or Bahar el Aice; this rising near the Line, considerably south of the sources of the Nile in the latitudes where fall perpetual rains. It never decreases, but it is always full. There is no such western branch as has been spoke of, nor none necessary; the ground rises everywhere to the W. and S. from the Nile. The rivers of Foor, Sel, Bagirma, Kolkol and Borno, all run west, though the course of the Nile and Abiad is often E. and S.E. It is the ground that rises from the Nile to Dar Borno, where is the high-land, or spine of Africa, and there slopes to the ocean, as to the east of that it does to the Red Sea, whatever the Nubian geographer, Ludolph, Vossius, and others, may say to the contrary.

From Sennaar to Fazuclo is seven days with unloaded camels, with loaded camels, twelve. There are no Nuba east of the Bahar el Aice. From Sennaar to Lowney is three days; then to Mugue, two; then to Myas, or Elcascab*, two; from this is Fazuclo.

From Kordofan to Darfoor, seven waterless days. Feyrab is the present king, the last was called Jesoe. They are a very barbarous fanatic people, called Tucorori.

The people of Sennaar have all the mixed features of all the negroes. The Shilook, or Funge, seem to have the head longer and broader at the base; the cranium tending to conical, high raised; the nose long and pointed downwards; the eyes large; the cheeks and eye-brows, cones standing much out; the lips not any way remarkably thick; the mouth large, and the teeth white and small. The southern Hamidge have the head large and well-shaped, the cheek bones high; the eyes not so large; the nose flat at the end, and turning rather upwards; the nostrils large and open; the nose broken in the middle, which feature their children born at Sennaar immediately lose; the lips thick and blubber as it is called; the mouth large. They are much stronger made than any of the blacks; longer lived and better inclined; and these qualities all increase as they go farther south, so that the best of all are those between Guba and

* Corrupted from El Casim.—E.

Agow-midre, in the country called Wumbarea, and between that and Welled Abalay, in the Abyssinian histories called Beluy.

This, upon the best information, seems to be the particular situation of these nations. The Nuba, bounded on the east by the river el Aice; on the west by Darfoor, or the desert between that and Kordofan; on the south by the high chain of mountains, Dyre and Tegla; and on the north by Harraza, perhaps, or the desert of Selyma, adjoining on the Barabra and desert of Barka. The Funge occupy the river El Aice, and extend themselves up it to the mountainous tract south, which is but a continuation of the mountains of Fazuclo and Kuara, where they end. The Hamidge are those to the west of Kuara, bounded on the south by Agow; and by the river Yabous on the south, on the other, or western side of the Nile; all then is Fazuclo to Dyre and Tegla, confining with the Nuba. All the south of Atbara and frontiers of Abyssinia, in a line nearly S. W. and N. E. from Kuara to the Habab, unless where broken in upon by the Arabs, are Baasa, or Dobena, the ancient inhabitants of Meroe, the Æthiopes meri of Pliny. The Pagans have been converted very slowly to the Jewish, Christian, and Mahometan faiths. The Abyssinians converted to Islamism are all bigots, all readers, and make profession of a more than ordinary observance of the Koran; the Shangalla, on the other hand, though converted, preserve that indifference for their new religion which they had for their old, and generally give excessively into drinking and swearing. Few of them can either read or write; I think I never saw one of them that could write.

The rainy days here at Sennaar have been the 13th, 15th, and 19th July, and no rain of any consequence else has fallen. The wind has fallen calm now every day.

The Vallis Garamantica seems either the mountains of Kone, or Haraz, perhaps the former; the latter is the Montes Æthiopici. There, and on the mountains to the south for ten days, are all Nuba. There are no Nuba east of the Bahar el Aice. Above the Shillook are the Dinka, another race of Shangalla. On the west side of the Nile, nearly opposite

Ashentol, the river Yabous comes from the south east, and falls into the Nile *.

From Sennaar to Lowney, three days; from Lowney to Mugue, two days; from Mugue to Myas, or el Kassab, two days; from this begins Fazuclo. All are soldiers called Bagodi. On the east begins the mountain of Fazuclo, which is as it were split, and over which the river falls; then all along the east side also are the soldiers called Bagodi. East from Jibbel Fazuclo, or a little S. E. is Abramale; east of that three days, Welled Abâli, in Habbesh. South from Abramale two days, Guba; and S.W. from Guba is the mountain Ashintol, Abessine, I suppose Agow. From near Ashintol rises the Dender, and passes by Guba on the West Fazuclo; runs three days between the mountains and Nile. In the middle of the gorge, about two-thirds of its length, south, is the Mek of Fazuclo's villages; the mountains west of the mountains of Fazuclo also are black nations, subject to Fazuclo. This Mek is a native black of that country, who is, however, placed or deposed by the Mek of Sennaar. The Guba, and inhabitants of the mountains to the W. of the river are Pagans. On the west side of the Nile, nearly opposite Ashentol, the river Yabous comes from the south-east, and falls into the Nile. On the north side of it is a Christian state, it is said, the prince or Mek of Shaira; and still further west, the Mek of Fertassi, Mahometan, and Pagan. The Galla are all along on the south of the Yabous, and have been all cut to pieces as often as they have attempted to pass the river, which is a very considerable one. All the country is plentiful in gold, elephants, &c. and well peopled. From Fazuclo to the Yabous, and south-west along its banks, as far as is known, it is very rainy; and from May to July, and again from September to the middle of November, very unwholesome. The gold is all found in red earth: wherever that is, is gold; wherever that is not, is none. This is the account the natives give of this country. From Hasceb the road is to Garri, a mountain to the south-west; then Abra-

* Mr B. is mistaken in his opinion as to the Garamantica vallis, which has been ascertained, by Horneman's travels, to be near Germa. —E.

mela, south; then Guba, south; or from Garri to Fazuclo. The people on the mountains of Fazuclo, and on to the Yabous, are very remarkably strong, and long-lived, and of large stature. They all go naked. One of their principal people, the Vizir (Shekh Adelan) assured me, had above 200 children, and was at that time so strong as to hunt the elephant, with no other arms than his lance, on foot.

From Sennaar to Shaadly, 6 hours; from Shaadly to Waalia, 13 hours; from Waalia to El Aice, 11 hours. From Waalia to El Aice, all trees, or wilderness, without houses, or water. After passing the El Aice, there is no village nor water till 18 hours after you come to Arabs, and a large collection of villages called Beni Kanany; these Arabs are Beni Koreish. From Beni Kanana, 14 hours to Koue. This is a small hill, not a high mountain, as before supposed. Here are Nuba; and there are water and villages till you arrive at Kordofan, which is another hill; and near it a number of villages, the principal of which is Lebeit.

North of Kordofan, 9 days, is Harrasa, a rocky mountain, of no very great height, where there is water; and here are a nation of Nuba. The mountain is perpendicular. The people live in a kind of camp below, enclosed round with bushes and thorns, and exact a due from all caravans who take water. Besides these hills, all from El Ais to Kordofan is sandy without herbage, full of serpents.

To the south of Kordofan 8 days, some say 6, others 10, are the high mountains Dyre and Tegla, running east and west; these are prodigious mountains, full of a great variety of tribes, with whom Kordofan is at war. From these come the slaves; and there is plenty of gold, elephants, &c. I imagine this is the same chain of mountains west of Fazuclo *.

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* This account of the route from Sennaar to El Ais, and thence to Ibeit, the chief place in Kordofan, may be compared with the more particular one in Browne's Travels into Darfur, p. 462. The mountains of Dyre and Tegla are the Deir and Tuggala of that traveller, which are names applied here, in a general sense, to the whole and more remote chain which produces the White River. The Dinka negroes, or Shangalla, as they are called in Habbesh, which Mr Bruce was told were a race that lived above the Shillook, are, in all probability, the Donga of Mr

Fazuclo is 5 days from Haseeb; from 80 to 90 miles. It is partly on the west, partly on the east of the Nile; but its chief town or village is on the west. It is four days from Ab-Halai which belongs to Kuara; it borders on the Agow to the south, to the east of the Nile, and on the Galla to the west. From this comes the gold. All the country near the Nile is inhabited by Arabs and people from Sennaar. The Arabs are Refaa. On the east of the Nile is Guba, a large district of Shangalla, on the east of the river; and inland here, the father of the present visier (Shek Adelan) and his brother, Shekh Mahomet, came from; and many others of the present considerable people, who, being born in Sennaar, are called Funge. Some say the country of the Funge is upon the river El Aice, but it is generally allowed that all that country is called Nuba, and that the Funge are the children of those turned Mahometans, and born at Sennaar, or in towns. Fazuclo is very mountainous on both sides of the river; the country of gold is among the mountains inland, on both sides; all the inhabitants are black, of the deepest kind, with thick lips and broken nose, which their children born in Sennaar lose. Formerly the seat of this kingdom of Nuba was Dongola, before the invasion of the Arabs; and here Khaled Ibn Walid was beaten. The Nubans had elephants then trained in their army; and they have a tradition, that this king of the Nuba was descended from Alexander, who had a son while in this country. The Refaa Arabs, at Fazuclo, have not changed their colour any more than those of Atbara.

N. B. The gold is found, even close by the Nile, in small quantities; it is everywhere picked up with red earth, and washed in dishes to separate it. It is nowhere found in mines. There are numbers of rivers here; and it rains 8 months from April, the time when it begins. Agues are very frequent, and bloody fluxes. It is cold all the season of the rains. Elephants are here in great quantities; rhino-

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Browne; and the coincidence of the accounts respecting the slaves taken in that region confirms this circumstance. Mr Browne's Itineraries from p. 451 to p. 473, may be collated, with these extracts from Mr Bruce's journals, to the credit of both, and with considerable advantage to geography.—E.

ceroses, ziraffas, wild hogs and all kinds of game. Civet cats are, too, in plenty: The negroes hunt and eat the flesh, but they do not know how to make it produce civet. The slaves are here employed in finding gold. The Dender comes from near the Agow. Haseeb is on the west side of the Dender.

There is no gold at Kordofan. It comes from a place south of it, called Shygoom; Shankala to Kordofan. It is 45 days from Darfoor *.

The country of the Funge is Fazuclo, and Guba east of Fazuclo, and west in that parallel to the Bahar el Aice; they bound the Nuba to the south. The Shillook, in the islands of the Bahar el Aice, are Funge also, not Nuba. The Mek Ismain is the twentieth king of the Funge in Sennaar, since the conquest over the Arabs. Baady, Nasser, and the present Ismain, were in our time. Baady reigned forty years, and was dethroned, and afterwards murdered; Nasser, eight years, dethroned and murdered: Ismain is now reigning the third year.

East of Guba is Abrumela; and east of Abrumela is Welled Abelay, called, by the Abyssinians, Belaya, and dependent on them. From Fazuclo, on the east of the Nile, to Belaye, is five days, or about 80 miles.

News are brought (Aug. 1.) that the people of Darfoor have marched with an army to take Kordofan, which, it is

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* The place from which gold is here said to come to Kordofan, appears to be the Sheibon of Mr Browne; to which a very curious itinerary from Ibeit, the capital town of Kordofan, is given, in pp. 460, 461, and 462, of his Travels in Africa. The province of Kordofan was indeed conquered by the Furians, in a few years after this date, by Sultan Téraub, the Teyrab of Mr Bruce, who usually resided at Ril (Browne's *Travels*, p. 240), a place described by Mr Browne in the page now quoted. With regard to Mahomet Abou Calec, the following account is also furnished by Mr Browne: "A king of the name *Abli-Calik*, is the idol of the people of Kordofan, where he reigned about fourteen years ago, and is renowned for probity and justice. The kings of Kordofan had been deputed by the Mecque of Sennaar till after the death of the son of Abli-calik, when it was usurped by Fur, in consequence of the weakness and dissensions of the government of Sennaar."—Browne's *Travels*, p. 307. Mr Browne was in Darfur, A. D. 1794, which brings down the death of Abou Calec to 1780.—E.

apprehended, they soon will do, being about 12,000 horse, and an infinite number of foot. There are, at Kordofan, about 1500 horse, with Mahomet Abou Calec; who, it is thought, will fall back on Sennaar, if not surrounded. The caravan, which was bringing all the valuable effects from Kordofan, was plundered at the Bahar el Aice, or near it, by the Beni-Gerar, a tribe of the Beni-Fajsara. The army of Foor was encamped at a place called Reel, south west of Lebeid, about seven or eight days, where there is plenty of water. It is their place of rendezvous, about the same distance as Foor. It is at Darfoor they put the king to death, with two razors, in a seshe, or handkerchief. At Sennaar he is killed with a sword, by one of his relations, the Gindi, or common executioner of the town.

Abstract of the Weather Journal at Sennaar, from the 6th to the 20th August 1772, while the Nile was rising by the rains in Habbesh, &c. July 30th, the Nile failing, and not affected.

August 6th, noon, thermometer 75½; rain; sky overcast. 7th, Thermometer 81; cloudy. 8th, Noon, thermometer, 81½. 9th, Noon, thermometer 83½. 10th, Noon, 85½. 11th, Noon, thermometer 83½; and at 1 P. M. 85. On the 12th, at noon, thermometer 86 in the house; in the sun, 115. All these days, from the 8th to the 12th inclusive, either overcast, or masses of white clouds.

At Sennaar, at 74 of Fahrenheit, cold. From 74 to 80, cool; from 80 to 92, temperate; all above, hot. Yet the Nubians do not sweat in the sun, though the thermometer is often there 150.

Sennaar, August 14th, the sun vertical, sunrise 74½; wind S. W. 1; streaky thin clouds through the air; cool. The Nile is increased a mere trifle this night. 8 o'clock A. M. thermometer 78½; wind S. W. 2; streaky clouds through the air; the sun shines high; cool. 9 A. M. thermometer 80½; wind S. W. 1; sky overclouded with high small broken white clouds; temperate. 10 A. M. thermometer 82; wind S. W. 1; all overcast; temperate, or cool. 11 o'clock, thermometer 82½; wind W. S. W. 1; all overcast; temperate. Noon, thermometer 82½; wind S. W. 1;

all overcast. 2 o'clock P. M. thermometer 86; wind W. S. W. 1; large spots of thin white clouds. 3 P.M. thermometer 87; wind S.W. 1; streaky high clouds through the air, especially S. 4 P. M. thermometer 88; wind S. W. 1; streaky clouds, but turned darker and heavier. 5 P.M. thermometer 88; overcast, so that the sun scarce appears; wind S. W. 0. Sunset, thermometer 86½; wind S.W. 0; high clouds through the air. August 15th, sunrise, thermometer 74½; wind S W. and thick rain, and all overcast. It has rained all night very violently; but the Nile is but a little increased. 8 o'clock A. M. thermometer 77½; wind S.W. and all overcast, and rainy like. The sun is now in the zenith; yet it has rained violently, contrary to the supposition of those, that the sun coming to the zenith, it is fair weather. Noon, thermometer 78; wind W. S. W. 0; small rain; all overcast. 3 P. M. thermometer 79; wind S. W. 0; all overcast, and beginning to rain. Sunset, thermometer 79½; wind E 0. all overcast; but the clouds seem turning lighter. The Nile still continues to fall.

August 16. Sunrise, thermometer 75°; wind, W. 0; clouds in the horizon all around; the sun rises behind the clouds; the Nile still falls. 10 A. M. thermometer 77½°; wind, S.W. 1; all overcast. 11 A. M. thermometer 80½; wind, S.W. 1; all overcast, with white stationary clouds. Noon, thermometer 83°; wind S. W. 1; all overcast, but no rain. 2 o'clock P. M. thermometer 84½°; wind S.W.: large white clouds filling the air, but clear sunshine, 3 P M. thermometer 85½; wind S. W. 1; large white clouds fill the air, and overcast the sun. 5 o'clock P.M. thermometer 85°; wind W.S. 0; it has cleared; large broken dispersed clouds, without sections, through the air. Sunset, thermometer 84°; wind E. by N.; high thin red streaks through the sky. Monday 17th, sunrise, thermometer 74°; wind, S.W. 1; all overcast, stormy and rainy like to the windward; violent rain in the night from the E. and E. N. E.; the Nile does not increase to the eye; the people say it has risen 1 peck. 8 A. M. thermometer 75½°; wind S.W. 1; all overcast. Noon, thermometer 80°; wind S. W. 1; all overcast, but fair as yet. Sunrise, thermometer 83°; a dead calm; all overcast. Tuesday, August 18. Sunrise, thermometer 71; wind, S. W. 1; all overcast; thick and misty

everywhere; it has rained in the most violent manner since 2 in the morning; still small rain; thunder and lightning in the night; the Nile has swelled prodigiously; cold (rain began at 2 in the morning.) 9 o'clock A. M. thermometer 72½; wind S. W.; constant small rain. 11 A. M. thermometer 76; wind S. W. 1; thick small rain from the W.; all overcast, dark, misty, and unpleasant. Noon, thermometer 76; wind S. W.; cloudy, and just left off raining. Sunset, thermometer 79; wind S. W. 1; overcast, but fair all afternoon. Wednesday 19th, sunrise, thermometer 75; wind light airs, E. and W. alternately; all overcast (fair all last night.) 8 A. M. thermometer 76½; wind W. S. W. 0; all overcast, but clearing; the sun shines faintly. [*N. B.* A civet cat and a hyæna were brought down by the stream this last night, and taken, near the town, alive; also great quantities of wood and trees; the Nile has increased greatly this night.] Noon, 81½; wind W. S. W. 0; cloudy, with intervals; clear and fair all this day as yet. Sunset, thermometer 80; wind N. E. 0; cloudy all over. Thursday, August 20th, sunrise, thermometer 75; wind W. S. W. 0; overcast with large broken clouds; the Nile has swelled tonight, so as to be level with its banks; but there has been no rain here. 9 o'clock, thermometer 77; wind S. W. 1; large spots of white clouds through the air, but clear sunshine, &c. &c.*

Entered Sennaar April 29th, and left it September 5th, 1772, having staid there four months and six days.

Computed miles of the road from Sennaar to Herbagi, as follows:

To Wed Solomon 3 miles; thence to Wed Tumbel 8 thence to Sitt Elbet 7; then to Wed Hydar 9; thence to the village Sherrib 4; thence to Wed Medincy 7; thence to Azaza 10; then to Sidi Ali Genowi 3; whence to Harbagi 7; in all 58; course N. by W. These 58 added to 13 30'

* The observations of latitude and longitude, from Koscam to Syene, are given in the end of this volume, along with the general list.

lat. of Sennaar, will make that of Herbagi 14° 34′; and deductions, in general, being made, the latitude, I say, will be 14° 30′.

For the particulars of the journey from Sennaar to Harbagi, and from that to Halfaia, near which the Bahar el Ais, or Abiad, joins the Bahar el Asrek, or what the natives of Atbara, Sennaar, and the southern part of the desert, between Sennaar and Egypt, plainly seem to consider as the Nile, the reader may consult the printed narrative in Volume VI. The following extract is made from the journals at Halfaia, where Mr Bruce resided, from the evening of the 22d, to the morning of the 29th of September, 1772. In justice to him, it must be observed, that these remarks were written at Halfaia, where, in the space of six days, he possessed abundance of time and opportunities to inquire about the two rivers, and even to visit the place where they meet. When writing his printed narrative, there is a possibility of his having been influenced by theory, or even by a design to make the Abay of Habbesh pass for the direct body of the Egyptian Nile. At this time, no such motives existed. Through all the journals, there is not a single hint, or innuendo, that the river of Abyssinia was not the river of Egypt. The question at present is not, Whether the Bahar el Abiad be the largest stream of the two? but, Whether Mr Bruce was conscious that it was the Nile? Whether the natives of Sennaar and Halfaia considered it as such? and, Whether literary people * can justify themselves for the attack they have openly made on the moral character of a man, who might, at times, be mistaken in common with the rest of the world, but who could not deliberately, amidst fatigue and danger, have sitten down to invent an answer to their unforeseen objections.

Halfaia is situated in the large semicircular peninsula which the Nile here makes; it is the residence of M. Wed

* See Mr Pinkerton's Modern Geography, art. Africa, Vol. II. p. 717; Hartmann's Edrisi Africa, on the character of Mr Bruce and his work; in his Introduction, inter libros in subsidium vocatos, p. xxxv. et passim; and Histoire d'Herodote, traduite du Grec, par M. Larcher, 9 vol. 1802, in the notes to his translation, passim. As a contrast to the spirit of these writers, see Major Rennel's successive Maps and Illustrations of the Geography of Northern Africa, in the works published under the patronage of the African Association.

Ageeb, king of all the country, till conquered about 1504 by the Shilook. The Arabs, who were strong, left him, and some of them paid their tribute to Sheikhs in other places. He is master of the Acaba, or pass of Gerri.

The river Abiad joins the El Azergue, or Nile, at Hojile, or Hojila, about nine miles south of Halfaia. The village was at first between the rivers; but the Fakir having placed his tomb on the river Nile, without the joining, the village has been transferred thither. The Nile is still at Halfaia called El Azergue, not the Nile *.

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* In the printed account of the junction of the two rivers, Vol. VI. p. 424, Mr Bruce seems to have committed a slight mistake, in describing the village of Wed Hojila, and the influx of the White River, as about 8½ miles north of Halfaia. It appears from this entry in the journal, that the junction is about nine miles south of that city, as laid down by him in his general map. Halfaia is there, indeed, not placed two-tenth parts of a degree north of the junction, but more than one-tenth part or five miles, which evidently agrees with his note made upon the spot. There is no notice in the journal respecting Wed Hojila, besides the passage extracted as above. It seems very probable that he went to see the junction, during his residence at Halfaia; and recollecting the place and circumstances of this, at the same time when he was dictating to his amanuensis the day's journey, made after leaving the town, that he was led into the statement in the narrative, without being sensible of the error which he had incurred. Great part of his work was dictated to another person, during composition: and this, taking into consideration the haste with which so many volumes were prepared for the press, will do more than account for a few inaccuracies in matters so easily confounded together. Be that as it may, the evidence of the journal and the map are clearly to be preferred to the printed statement; and admitting their authority, we also learn that the Nile, that is, the great river, is still called, at Halfaia, nine miles below the junction, the Bahar el Asrek. The name of the Abyssinian branch, extended to the united stream, either insinuates that the colour of the Abay is still retained by the river, a circumstance, which, considering the superior mass of the western waters, white with mud, is not very probable; or that the river is still considered as a continuation of the Abyssinian branch, and consequently retains the name of its original. All the Arabs, from Fazuclo to the junction, know the river of Habbesh by the name, Bahr el Asrek. If they give this appellation to the river after it has joined a larger branch, it is plain that they consider the larger branch as received into the smaller, not the smaller as received into it. It is the straight course which determines these unlettered surveyors. Many similar instances occur within our own island, of rivers being called after the interior branch, because they run straight on in its direction; while the greater torrents, that rise in more elevated grounds, are forgotten in the course of these,

Wed Baracut Shek, of Alifoon, is son of a Shekh Idris Wed Erbab, a famous saint who is buried in a tomb in the town.

Ostrich feathers are an article sent from Sennaar to Cairo. The birds are caught between Harbagi and the river El Aice, or Abiad, on the sands west of that town; for greatest part of the borders of the El Aice is white sand, and thick woods, where the Arabs go to escape the flies (zumb) which we found not at Harbagi; but the houses were full of bugs, which we had not seen any where since our leaving Abyssinia.

The other contents of the journals, at this time, are a great variety of observations on the manners and history of the tribes on the way, most of which are incorporated with the printed narrative. The singular opinions of the Nuba, or Funge, respecting witchcraft, and the plants with which they charm serpents, are described at great length, and are given in this volume, at the end of the natural history. The astronomical observations are, at this period, mixed with the diary; for as Mr Bruce carried the stripes of paper in his hand, or by his side, while travelling, he had not access to any other book.

The following extract from the journal of the weather at Chendi, on the dry brink of the desert, between Nubia and Egypt, with the geographical notes on the reverse of the paper, may conclude this number.

Chendi, Tuesday 13th October 1772. Five o'clock, morning, thermometer 85; wind N. E.; a few clouds in the S.; dead calm. Sunrise, thermometer 85; wind N. E.; cloudy in the S.; dead calm. 9 A. M. thermometer 83; wind N. O; dead calm; long white streaks in the S. Noon, thermometer 116; wind N. W.; white clouds in the S.; broken and dispersed. Sunset, thermometer 95; wind N. W. O; cloudy in the horizon to N. and S.; clear above. 11 h. and 50

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because they join them in an angular position. That the Bahr el Abiad deserves, from its importance, to be reckoned the principal source of the river of Egypt, is not to be doubted; that Herodotus and Ptolemy, who led their translators, the Asiatic Arabs, considered it as such, is evident; but the natives of Habbesh, Sennaar, and Atbara seem to dispute these facts so generally, that Mr Bruce may surely be excused in following their opinion.

min. at night, thermometer 88; cloudy in the horizon to the S. cloudless over head; clear moonlight.

Wednesday 14th, sunrise, thermometer 82; wind S. W. 0; temperate; dead calm; clouds in the horizon to N. and W. 9 o'clock, thermometer 96; wind N. E.; cloudy to the N.; small broken clouds. Noon, thermometer 109; wind W. by N. 1; hazy low in the horizon to the S.; all over-head cloudless; very hot. 3 P. M, thermometer 107; wind W. 1; large masses of white clouds fill the air; very hot. Sunset, thermometer 95; wind E; a very few broken clouds in the horizon all around; everywhere else clear; cool and temperate.

Thursday 15, sunrise, thermometer 78½; wind N. W. 0; clouds to the S.; cool. Noon, thermometer 106½; wind W. 1; cloudless; very hot. Sunset, thermometer 95; wind E. calm and cloudles

Friday, 16, sunrise, thermometer 79; wind E. by N. 1; a few light white clouds through the air; cool. 9 o'clock, thermometer 91½; wind, N. E. 2; cloudless; warm. Noon, thermometer 103; wind E. 1; cloudless; very hot. Sunset, thermometer 95; wind N.; cloudless in the S.

Saturday 17th, sunrise, thermometer 77; wind E. 1; cool; cloudy in the S. Noon, thermometer 101; wind E.; cloudy in the S. and broken clouds in the E.; very hot. 3 o'clock P. M. thermometer 98: wind N. E. 1; white clouds fill the air; warm, or rather hot. Sunset, thermometer 94; wind E.; cloudy; thick and black clouds come from the S. ****

Notes.—"From Takaki to Deir is five days, Jellaba; there is water from wells. The Janizaries at Deir are very faithless, and often rob the caravans which carry them sumach and slaves. The Kennous, the people upon the river, are much better observers of their word and oath; and it is here the caravans stay, if they are apprehensive of being ill received at Deir and Ibrim.

Takaki is a large district, the last of Sennaar to the north. It is under Wed Ageeb, who sends a Shekh hither. They are Jahaleen, of the tribe Rabatab, and have many horse; they have large plantations of dates on both sides of the river Nile, which after this turns west to Chaigie and Dongola. They sow dora and wheat, and water it with the Saaky;

but their principal subsistence, as well as article of commerce, is dates. They have no rain, and are separated from Riffe by a sandy desert, inhabited by Bishareen and Ababde.

Takaki is north from Barbar. Barbar, or Berber rather, is three days, or 45 miles, from Takaki. Its inhabitants are Jahaleen; their tribe Myrafab; they are of the same father with the Rabatab.

Shandi (Chendi) is of three tribes of Jahaleen; the Amarab, the Rahmarab, and Shukaheera; these last are chiefly in the villages. It is near two miles from the Nile, which is nearest to the N. W. It comes from Gerri from the S. and runs N.; then winds round to N. N. E. to N. E. till N. of the town it runs E. and W. that is, from W. to E. Between the town and the river is the sown land, watered by Sakeas; the river, too covers this plain when at its height; for a small time only. Upon extraordinary Niles, when it is a considerable time upon it, at Shandi there is scarce any wheat, which comes from Halfaia.

From Chandi to Dongola is eight days, by way of Corti, N. E. more E. a little; three days further Dongola, in a direction to northward of N. E. We pass the river at Wed Baala Nagga, and cross the north part of the desert Bayhouda. The wells are a little out of the road to the south, and there is no other water in the road between Corti and Wed Baala Nagga. From Dongola to Barbar eight days, jellaba, at the rate of 15 miles per day."

The journal from Chendi through the desert is very barren in observations, and all that it contains are expanded in the printed narrative. It consists of bearings, the hours and rate of travelling, with the state of the thermometer, &c. through a country, where, as Hagi Ismael expressed it, "the earth was on fire, and the wind was flame." At Assouan Mr Bruce resumed his pen, with a vigour which could not have been expected in any man after such a journey. He seems to have written very frequently in his passage down the Nile, as the stripes are filled with notes on the places which he passed. He still carried them about him till he came to Cairo, where he concluded his observations. The route through the desert was fixed by computation of the rate of travelling, per day, and the direction by the points of the compass. The observations of latitude at Chendi and Assouan were compared, and the distance settled by them

This must be remembered when the authority for that part of the map is required.

In the Journal are found only the hours of travelling, the points by compass, and some short remarks. The day of the week is sometimes misnamed. Some of the notes are as follows: "Sirré, in Beja, means a dog. The Kennouss are the peasants at Syene. Idris Welled Hamran is our guide through the desert. Tuesday at Naibey. Wednesday, alighted in a torrent's bed, a continuation of that in which we have grazed our camels all the way from Terfowey. Saturday and Thursday, (observe the days are misnamed from haste in writing) found large strata of fossile salt, not a foot below the surface of the desert. Found Mahomet Aga murdered and unburied. Gimmarack. Marble mountains. Umgwatt. Thursday, 26th, afternoon, 5½ o'clock, three of our camels died at Safieh."

These particulars I selected from the Journal, as worthy of notice, though they are not so full as it would have admitted them to have been. The printed narrative has the whole, and the dates very correct and regular.

The notes on Syene and on the towns down the Nile are exceedingly copious. Some dates are as below.

Wednesday, Dec. 9th. Went to see the cataract at the Kennouss village of Termoussy. The fall very small, and has been much exaggerated.

The Kenouss are as far as Succout, on both sides of the Nile.

At Syene, Dec. 8th, 1772, observed the altitude of the sun's upper limb; Orion's west shoulder, and east. Dec. 10th, observed the meridian alt. of the sun's upper limb.

For an account of all these and some other observations there, see the "observations of latitude and longitude" in this volume.

All the journals, from Koseam to Cairo, are written on stripes of drawing paper. They are still legible, but the ink has either been bad, or has faded extremely in the desert. It is easy to see that they were written at the respective places, from the gradual tints of the ink, the carelessness of the writing, and every kind of evidence that papers of the kind can furnish. The corrections made on them, which are not numerous, appear in blacker ink, and in a more attentive hand.

APPENDIX

TO THE

TRAVELS TO DISCOVER THE SOURCE OF THE NILE,

CONTAINING A

SELECTION OF NATURAL HISTORY.

INTRODUCTION.

As it has been my endeavour, throughout this history, to leave nothing unexplained, that may assist the reader in understanding the different subjects that have been treated in the course of it, I think myself obliged to say a few words concerning the manner of arranging the Appendix. With regard to the Natural History, it must occur to every one, that, however numerous and respectable those may be who have dedicated themselves entirely to this study, they bear but a very small proportion to those who, for amusement or instruction, seek the miscellaneous and general occurrences of life that ordinarily compose a series of travels.

By presenting the two subjects promiscuously, I was apprehensive of incommoding and disgusting both species of readers. Every body that has read Tournefort, and some other authors of merit of that kind, must be sensible how unpleasant it is to have a very

rapid, well-told, interesting narrative, concerning the arts, government, or ruins of Corinth, Athens, or Ephesus, interrupted by the appearance of a nettle or daffodil, from some particularity which they may possess, curious and important in the eye of a botanist, but trival and indifferent to an ordinary beholder.

To prevent this, I have placed what belongs to Natural History in one volume, or appendix; and, in so doing, I hope to meet the approbation of my scientific botanical readers, by laying the different subjects all together before them, without subjecting them to the trouble of turning over different books to get at any one of them. The figures, and a few other plates of this kind, are illustrations of what immediately passes in the page: these descriptions seldom occupy more than a few lines; and therefore such plates cannot be more ornamentally or usefully placed, than opposite to the page which treats of them.

Some further consideration was necessary in placing the maps, and the appendix appeared to me to be by far the most proper part for them. The maps of the country, whether such as are general, or those adapted to serve particular itineraries, should always be laid open before the reader, till he has made himself perfectly master of the bearings and distances of the principal rivers, mountains, or provinces where the scene of action is then laid. Maps that fold lie generally but one way, and are usually of strong paper; so that when they are doubled by an inattentive hand, contrary to the original fold they got at binding, they break, and come asunder in quarters and square pieces; the map is destroyed, and the book ever after incomplete; whereas, even if this misfortune happen to a map placed in the appendix, it may either be taken out and joined anew, or replaced, at very little expence, by a fresh map from the bookseller.

I shall detain the reader only a few minutes with

what I have further to say concerning the particular subjects of Natural History of which I have treated. The choice I know, though it may meet with the warmest approbation of one class of readers, will not perhaps be equally agreeable to the taste of others. This I am heartily sorry for. My endeavour and wish is to please them all, if it were possible, as it is not.

The first subject I treat of is trees, shrubs, or plants; and in the selecting of them, I have preferred those which, having once been considered as subjects of consequence by the ancients, and treated largely of by them, are now become, from want of the advantage of drawing, lapse of time, change of climate, alteration of manners, or accidents befallen the inhabitants of a country, of doubtful existence, and uncertain description. The ascertaining of many of these is necessary to the understanding of the classics.

It is well known to every one versant in this part of Natural History, what a prodigious revolution has happened in the use of drugs, dyes, and gums, since the time of Galen, by the introduction of those Herculean medicines drawn from minerals. The discovery of the new world, besides has given us vegetable medicines nearly as active and decisive as those of minerals themselves. Many found in the new world grow equally in the old, from which a confusion has arisen in the history of each, that will become inextricable in a few generations, unless attended to by regular botanists, assisted by attentive and patient draughtsmen ignorant of system, or at least not slaves to it; who set down upon paper what with their eyes they see does exist, without amusing themselves with imagining, according to rules they have themselves made, what it regularly should be. One drawing of this kind, painfully and attentively made, has more merit, and promotes true knowledge more certainly, than a hundred horti sicci which constantly pro-

duce imaginary monsters, and throw a doubt upon the whole. The modern and more accurate system of botany has fixed its distinctions of genus and species upon a variety of such fine parts naturally so fragile, that drying, spreading, and pressing with the most careful hands, must break away and destroy some of them. These deficient in one plant, existing in another, in all other respects exactly similar, are often, I fear, construed into varieties, or different species, and it is well if the misfortune goes no farther. They are precisely of the same bad consequence as an innacurate drawing, where these parts are left out through inattention, or design.

After having bestowed my first consideration on those that make a principal figure in ancient history, but are either not at all, or imperfectly known now, my next attention has been to those which have their uses in manufactures, or medicine, or are used as food in the countries I am describing.

I have next selected and described plants, or the varieties of plants, unknown, whether in genus or species. In these I have dealt sparingly, in proportion to the knowledge I yet have acquired in the subject, which is every day increasing, and appears perfectly attainable.

The history of the birds and beasts is the subject which occupies the next place in this appendix; and the rule I follow here, is to give the preference to such of each kind as are mentioned in Scripture, and concerning which doubts have arisen. A positive precept, that says, Thou shalt not eat such a beast, or such a bird, is absolutely useless, as long as it is unknown what that bird or what that animal is.

Many learned men have employed themselves with success upon these topics, yet much remains still to be done; for it has generally happened, that those perfectly acquainted with the language in which the Scrip-

tures were written, have never travelled, nor seen the animals of Judea, Palestine, or Arabia; and again, such as have travelled in these countries, and seen the animals in question, have been either not at all, or but superficially acquainted with the original language of Scripture. It his been my earnest desire to employ the advantage I possess in both these requisites, to throw as much light as possible upon the doubts that have arisen. I hope I have done this freely, fairly, and candidly; if I have at all succeeded, I have obtained my reward.

As for the fishes and other marine productions of the Red Sea, my industry has been too great for my circumstances. I have by me above 300 articles from the Arabian Gulf alone, all of equal merit with those specimens which I have here laid before the public. Though I have selected a very few articles only, and those perhaps not the most curious; yet as they are connected with the trade of the Red Sea, carried on in ancient times, which may be resumed at a future period, and of which I have treated professedly, I have preferred them, as having a classical foundation, to many others more curious and less known. Engraving in England has advanced rapidly towards perfection; and the prices, as we may suppose, have kept proportion with the improvement. My small fortune, already impaired with the expence of the journey, will not, without doing injustice to my family, bear the additional one, of publishing these numerous articles, which, however desirable it might be, would amount to a sum which it would not be thought prudent in me to venture.

If Egypt had been a new, late, and extraordinary creation, the gift of the Nile, in times comparatively recent, as some modern philosophers have pretended, the least thing we could have expected would have been to find in it some new and extraordinary plants,

very different in figure and parts from those of ancient times, made by the old unphilosophical way, the fiat of the Creator of the universe. But just the contrary has happened. Egypt has no trees, shrubs, or plants peculiar to itself *. All are brought thither from Syria, Arabia, Africa, and India; and these are so far from being the gift of the Nile, as scarcely to accustom themselves to suffer the quantity of water that for five months covers the land of Egypt by the inundation of that river.

Even many of those that the necessities of particular times have brought thither, to supply wants with which they could not dispense, and those which curious hands have brought from foreign countries, are not planted at random. They would not grow in Egypt at large, but in chosen places formerly artificially raised above level, for gardens and pleasure-ground, where they are at this day watered by machinery; or upon banks above the calishes, which, though near the water, are yet above the level of its annual inundation. Such is the garden of Mattareah, sometimes filled with exotic plants from all the countries around, on account of the veneration or superstition which pilgrims and dervishes, the only travellers of the East, have for that spot, the supposed abode of the Virgin Mary when she fled into Egypt; though at present so much neglected, as to have scarcely one foreign or curious plant in it.

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* Those philosophers might reply, that the want of native plants is an additional proof of its having been lately formed. Islands raised by earthquakes from the sea are long without herbage. Some have pretended that America is a continent of later date than what is called the Old World, and on that account less plentifully stocked with various kinds of animals. Mr Bruce is, nevertheless, probably right in both his assertions. Egypt is no modern production of the Nile, though it may have been once under the waves of the Mediterranean.—E.

The first kind of adventitious productions, and the oldest inhabitant of Egypt brought there for use, is the sycamore, called Giumez * by the Arabs. From its size, the facility with which it is sawn into the thinnest planks, and the largeness of these planks, corresponding to the immense size of the tree, it was most usefully adapted to the great demand they then had for mummy-chests, or coffins, which are made of this tree only. In order to increase its value among these people, we may mention another supposed quality, its incorruptibility, very capable of giving it a preference, as coinciding with the ideas which led the Egyptians to those fantastic attempts of making the body eternal.

This last property, I suppose, is purely imaginary. For though it be true that tradition says, that all the mummy-chests, which have been found of former ages, were made of sycamore; though the same is the persuasion of latter times, and the fact be so far proven, by all the mummy-chests now found being of that wood; yet I will not take upon me to vouch, that incorruptibility is a quality of this particular tree. I believe that seasoned elm, oak, or ash, perhaps even fir, laid in the dry sands of Egypt, perfectly screened from moisture, and defended from the outward air, as all mummy-chests are, would likewise appear incorruptible; and my reason is, that having got made, while at Cairo, a case for a telescope, of sycamore plank, I buried it in my garden, after I came home from my travels, so as to leave it covered by half a foot of earth. In less than four years it was entirely putrid and rotten. And another telescope case of the

* Signifying a fig-tree, from the multitude of figs which grow round the trunk.

cedar of Lebanon appeared much less decayed, though even in this last there were evident signs of corruption. But supposing it true, that these planks have been found incorruptible, a doubt may still arise, whether they do not owe this quality to a kind of varnish of resinous materials, with which I have seen almost all the mummy-chests covered, and to which materials the preservation of the mummy itself is in part certainly owing. The sycamore is a native of that low warm stripe of country between the Red Sea and the mountains of Abyssinia; we saw a number of very fine ones before we came to Taranta; they also grow in Syria about Sidon, but inferior in size to the former; they do not seem to thrive in Arabia, for want of moisture.

All the other vegetable productions of Egypt have been in a fluctuating state from one year to another. We find them in Prosper Alpinus, and by his authority we seek for them in that country. In Egypt we find them no more: through neglect, they are rotten and gone; but we meet them flourishing in Nubia, Abyssinia, and Arabia Felix; and these are the countries whence the curious first brought them, and from which, by some accident similar to the first, they may again appear in Egypt.

The work of Prosper Alpinus, then, so far from being a collection of plants and trees of Egypt, may be said to be a treatise of plants that are not in Egypt, but by accident. They are gleanings of natural history from Syria, Arabia, Nubia, Abyssinia, Persia, Malabar, and Indostan, of which, as far as I could discern or discover, seven species only remained when I was in Egypt, mostly trees of such a growth as to be out of the power of every thing but the axe.

The plant that I shall now speak of, the Papyrus, is a strong proof of this, and a remarkable instance of

the violent changes these subjects have undergone in a few ages. It was at first the repository of learning and of record; the vehicle of knowledge from one nation to another; its uses were so extended, that it became even the food of man; and yet we are now disputing what this plant was, what was its figure, and whether or not it be found in Egypt.

A gentleman * at the head of the literary world, who from his early years has dedicated himself to the study of the theory of botany, and at a riper age has travelled through the world in the more agreeable pursuit of the practical part of it, has assured me, that, unless from bad drawings, he never had an idea of what this plant was, till I first gave him a very fine specimen. The Count de Caylus says, that having heard there was a specimen of this plant in Paris, he used his utmost endeavours to find it; but when brought to him, it appeared to be a cyperus of a very common, well-known kind. With my own hands, not without some labour and risk, I collected specimens in Syria, from the river Jordan, from two different places in Upper and Lower Egypt, from the lakes Tzana and Gooderoo in Abyssinia; and it was with the utmost pleasure I found they were in every particular intrinsically the same, without any variation or difference from what this plant has been described to be by the ancients. Only I thought that those of Egypt, the middle of the two extremes, were stronger, fairer, and fully a foot taller, than those in Syria and Abyssinia.

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* Sir Joseph Banks.

OF

PLANTS, SHRUBS, AND TREES.

PAPYRUS.

The papyrus is a cyperus, called by the Greeks Biblus. There is no doubt but it was early known in Egypt; since we learn from Horus Apollo, that the Egyptians, wishing to describe the antiquity of their origin, figured a faggot, or bundle of papyrus, as an emblem of the food they first subsisted on, when the use of wheat was yet unknown in that country. But I should rather apprehend, that another plant, hereafter described, and not the papyrus, was that which was substituted for wheat; for though the Egyptians sucked the honey, or sweetness, from the root of the papyrus, it does not appear that any part of this cyperus could be used for food, nor is it so at this day, though the Ensete, the plant to which I allude, might, without difficulty, have been used for bread in early ages, before the discovery of grain. In several provinces of Abyssinia it holds its place at this day.

The papyrus seems to me to have come early down from Ethiopia, and to have been used in Upper Egypt

immediately after the disuse of hieroglyphics: the first paper made from this plant was in Seide. By Seide was anciently meant Upper Egypt, and it is so called to this day; and the Saitic, probably the oldest language known in Egypt after the Ethiopic, still subsists, being written in the first character that succeeded the hieroglyphics in the valley, or cultivated part of Egypt*.

Early, however, as the papyrus was known, it does not appear to me ever to have been a plant that could have existed in the Nile, or, as authors have said, been proper to it. Its head is too heavy, and, in a plain country, the wind must have had too violent a hold of it. The stalk is small and feeble, and likewise too tall, the root too short and slender to stay it against the violent pressure of the wind and current; therefore I believe it never could be a plant growing in the Nile itself, or in any very deep or rapid river.

Pliny†, who seems to have considered and known it perfectly in all its parts, does not pretend that it ever grew in the body of the Nile, but in the calishes, or places where the Nile had overflowed and was stagnant, and where the water was not above two cubits high. This observation, I believe, holds good universally, at least it did so wherever I have seen this plant, either in the overflowed ground in the Seide, or Up-

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* Mr Bruce has here inadvertently led himself into an error, by not attending to the difference between Saitic and Sahidic. Sais, from which the charta Saitica derived its name, was the metropolis of the Saitic nome in the Delta celebrated for the worship of Neith or Minerva. The name Sais is in Coptic Soou, and very ancient. The word Sahid is Arabic, and was not applied to Upper Egypt before the Mahometan conquest. The dialect of the Copts found in Upper Egypt was first called Sahidic by those who spoke Arabic.—L.

† Plin. Nat. Hist. lib. xiii. cap. 11.

per Egypt, or in Abyssinia. In these places it never grew in the bed of a river, but generally in some small stream that issued out of, or into some large stagnant lake, or abandoned water-course. It did not even trust itself to the weight of the wave of the deepest part of that lake when agitated by the wind, but it grew generally about the borders of it, as far as the depth of the water was within a yard.

Pliny says it grew likewise in Syria; and there I saw it first, before I went into Egypt. It was in the river Jordan, between the site of the ancient city Paneas, which still bears its name, and the lake of Tiberias, which is probably the lake Pliny alludes to, where he says it grew, and with it the calamus odoratus, one of the adventitious plants brought thither formerly by curious men (as I conjecture), but now existing no more, either in Syria or Egypt. It was on the left hand of the bridge, called the Bridge of the Sons of Jacob. The river where it grew was two feet nine inches deep, and then increased with rain. It grew likewise, as Guilandinus* tells us, at the confluence of the Tigris and the Euphrates. I apprehend that it was not thus propagated into Asia and Greece, till the use of it, as manufactured into paper, was first known.

When that was still admits of some difficulty. Pliny says, that Varro writes it came not into general use till after the conquest of Egypt by Alexander; yet it is plain from Anacreon†, Alceus, Æschylus, and the comic poets, that it was known in their time. Plato and Aristotle speak of it also; as do Herodotus and

* Melch. Guilandin. Philosoph. and Medic. Lausanne, Ann. 1576, 8vo.

† Anac. Ode 5.

Theophrastus *. We know it was of old in use among the Ionians, who probably brought it, in very early days, directly from Egypt. Numa, too, who lived 300 years before Alexander, is said to have left a number of books wrote on the papyrus, which a long time after his death were found at Rome.

All this might very well be: the writers of those early ages were but few, and those that then were, had all of them, more or less, connection by their learning with Egypt. It was to them only Egypt was known; and if they learned to write there, it was not improbable, that from thence, too, they adopted the materials most commodious for writing upon.

With Aristotle began the first arrangement of a library. Alexander's conquest, and the building of Alexandria, laid open Egypt, with its trade and learning, to the world. Papyrus, then, or the paper made from it, was the only material made use of for writing upon. A violent desire of amassing books, and forming a library, immediately followed; which we may safely attribute to the example set by Aristotle.

The Ptolemies, and the kings of Pergamus, contended who should make the largest collection. The Ptolemies, masters of Egypt and the papyrus, availed themselves of this monopoly to hinder the multiplication of books in Greece. The other princes probably smuggled the plant, and propagated it wherever it would grow out of Egypt. Eumenes, king of Pergamus, set about bringing to perfection the manufacture of parchment, which long before the Ionians had used from scarcity of paper; for whatever resemblance there may be in names, or whatever may be inferred from them, writing upon skins, or parchment, was

* Theoph. Hist. Plant. lib. iv. cap. 9.

much more ancient than any city or state in Greece, and in use, probably, before Greece was inhabited. The Jews, we know, made use of it in the earliest ages. At this very time which we are now speaking of, we learn from Josephus *, that the elders, by order of the high priest, carried a copy of the law to Ptolemy Philadelphus, in letters of gold, written upon skins, the pieces of which were so artfully put together, that the joinings did not appear.

The ancients divided this plant into three parts: the head and the small part of the stalk were cut off, then the woody part, or bottom, and the root connected with it, and there remained the middle. All these had separate uses. Pliny † says, the upper part, which supported the large top itself, with the flowers upon it, was of no sort of use but to adorn the temples, and crown the statues of the gods; but it would seem, that it was in use likewise for crowning men of merit. Plutarch ‡ says, that Agesilaus preferred being crowned with that to any other, on account of its simplicity; and that, parting from the King, he had sought to be crowned with this as a favour, which was granted him. Athenæus ‖, on the contrary, laughed at those that mixed roses in the crown of Papyrus; and he says it was as ridiculous as mixing roses with a crown of garlic. The reason, however, he gives, does not hold; for papyrus itself smells no more of mud, as he supposes, than a rose-bush; nay, the flower of the papyrus has something agreeable in its smell, though not so much so as roses. If he had said, that the head of the pa-

* Joseph. lib. xii. p. 105.
† Plin. Nat. Hist. lib. 13. cap. 11.
‡ Plutarch in Agesilao.
‖ Athen. lib. 15.

pyrus resembled withered grass, or hay, and made a bad contrast with the richness and beauty of the rose, he had said well. But notwithstanding what Pliny has written, the head of the papyrus was employed, not only to make crowns for statues of the gods, but also to make cables for ships. We are told, that Antigonus made use of nothing else for ropes and cables to his fleets, before the use of spartum, or bent grass, was known; which, though very little better, at this day serves that purpose in small ships on the coast of Provence. The top of the papyrus was likewise used for sewing and caulking the vessels, by forcing it into the seams, and afterwards covering it with pitch.

Pliny * tells us, that the whole plant together was used for making boats, a piece of the acacia tree being put in the bottom to serve as the keel, to which the plants were joined, being first sewed together, then gathered up at stem and stern, and the ends of the plant tied fast there, "Conseritur bibula Memphitis cymba papyro;" and this is the only boat they still have in Abyssinia, which they call Tancoa. By the use of these it is that Isaiah describes the nations, probably the Egyptians, upon whom the vengeance of God was speedily to fall. I imagine also, that the junks of the Red Sea, said to be of leather, were first built of papyrus, and covered with skins. In these the Homerites trafficked with their friends, the Sabeans, across the mouth of the Red Sea; but they can never persuade me, however generally and confidently it has been asserted, that vessels of this kind could have lived an hour upon the Indian ocean.

The bottom, root, or woody part of this plant, was likewise of several uses before it turned absolutely

* Plin. Nat. Hist. lib. xiii. cap. 11.

hard; it was chewed in the manner of liquorice, having a considerable quantity of sweet juice in it. This we learn from Dioscorides; it was, I suppose, chewed, and the sweetness sucked out in the same manner as is done with sugar-cane. This is still practised in Abyssinia, where they likewise chew the root of the Indian corn, and of every kind of cyperus; and Herodotus tells us, that about a cubit of the lower part of the stalk was cut off, roasted over the fire, and eaten.

From the scarcity of wood, which was very great in Egypt, for the reasons already mentioned, this lower part was likewise used in making cups, moulds, and other necessary utensils. We need not doubt, too, one use of the woody part of this plant was to serve for what we call boards, or covers for binding the leaves, which were made of the bark: This we learn both from Alcæus and Anacreon.

In a large and very perfect manuscript in my possession, which was dug up at Thebes, the boards are of papyrus root, covered first with the coarser pieces of the paper, and then with leather, in the same manner as it would be done now. It is a book one would call a small folio, rather than by any other name; and I apprehend, that the shape of the book, where papyrus is employed, was always of the same form with those of the moderns. The letters are strong, deep, black, and apparently written with a reed, as is still practised by the Egyptians and Abyssinians. It is written on both sides, so never could be rolled up as parchment was; nor would the brittleness of the materials, when dry, support any such frequent unrolling. This probably arises from their having first written upon papyrus, after the use of stone was laid aside, and only adopted skins upon their embracing the Jewish religion. The Ethiopians, indeed, write upon parchment,

yet use the same form of books as we do. The outer boards are made of wood, and covered with leather. It was the law only, they say, they were in use to preserve in one long roll of parchment, upon the fore-side of which it was written; it being indecent and improper to write any part of it on the back, or a less honourable place of the skin. And such, for this very reason, was the roll we have just mentioned presented to Ptolemy, where such pains were taken in joining the several skins together.

The manner in which paper was made has been controverted; but whoever will read Pliny * attentively, cannot, I imagine, be long in doubt. The thick part of the stalk being cut in two, the pellicle between the pith and the bark, or perhaps the two pellicles, were stript off, and divided by an iron instrument, which probably was sharp pointed, but did not cut at the edges. This was squared at the sides, so as to be like a ribband, then laid upon a smooth table, or dresser, after being cut into the length that the leaf was required to be. These stripes, or ribbands of papyrus, were lapped over each other by a very thin border, and then pieces of the same kind were laid transversely, the length of these answering to the breadth of the first. The book which I have is eleven inches and a half long, and seven inches broad, and there is not one leaf in it that has a ribband of papyrus of two inches and a half broad; from which I imagine, the size of this plant, formerly, being fifteen feet long, was pretty near the truth. No such plant, however, appears now; I do not remember to have ever seen one more than ten feet high. This is probably owing to their being allowed to grow wild, and too thick toge-

* Plin. Nat. Hist. lib. xiii. cap. 12.

ther, without being weeded. We know from Herodotus*, that the Egyptians cut theirs down yearly as they did their harvest.

These ribbands, or stripes of papyrus, have twelve different names in Pliny†, which is to be copious with a vengeance. They are, philura, ramentum, scheda, cutis, plagula, corium, tænia, subtegmen, statumen, pagina, tabula, and papyrus. After these, by whatever name you call them, were arranged at right angles to each other, a weight was placed upon them while moist, which compressed them; and so they were suffered to dry in the sun.

It was supposed that the water of the Nile‡ had a gummy quality, useful to glue these stripes together. This, we may be assured, is without foundation, no such quality being found in the water of the Nile. On the contrary, I found it, of all others, the most improper, till it had settled, and was absolutely divested of all the earth gathered in its turbid state. I made several pieces of this paper, both in Abyssinia and Egypt; and it appears to me, that the sugar, or sweetness, with which the whole juice of this plant is impregnated, is the matter that causes the adhesion of these stripes together, and that the water only serves to dissolve this, and put it perfectly and equally in fusion.

There seemed to be an advantage in putting the inside of the pellicle in the situation in which it was before being divided, that is, the interior parts face to face, one long-ways, and one cross-ways, after which a thin board of the cover of a book was laid first over it, and a heap of stones piled upon it, I do not think that it

* Herodot. lib. xi.
† Plin. Nat Hist. lib. xiii. cap. 11
‡ Plin. lib. xiii. cap. 12.

succeeded with boiled water, and it was always coarse and gritty with the water of the Nile. Some pieces were excellent, made with water that had settled, that is, in the state in which we drink it; but even the best of it was always thick and heavy, drying very soon, then turning firm and rigid, and never white. Nor did I ever find one piece that would bear the strokes of a mallet*, but in its greenest state the blow shivered and divided the fibres length-ways; nor did I see the marks of any stroke of a hammer, or mallet, in the book in my custody, which is certainly on Saitic or Hieratic paper. I apprehend, by a passage in Pliny †, that the mallet was used only when artificial glue, or gum, was made use of; which must have been as often as they let these stripes of the ribband, or pellicle, dry before arranging them.

Pliny ‡ says, the books of Numa were 830 years old when they were found, and he wonders, from the brittleness of the inside of the paper, it could have lasted so long. The manuscript in my possession, which was dug up at Thebes, I conjecture is near three times the age that Pliny mentions; and, though it is certainly fragile, has substance and preservation of letter enough, with good care, to last as much longer, and be legible.

If the Saitic paper was, as we imagine, the first in-

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* Sir Joseph Banks shewed me a slip of paper, which he got from an Indian gentleman, made, if I remember, of a cyperus found in the river or lake of Thrasymene. I do not recollect the process; but the paper it self was infinitely superior to any I had ever attempted, and seemed to possess a great portion of flexibility, and was more likely to answer the purposes of paper, than even the old Egyptian, if it had been dressed up and finished.

† Plin. Nat. Hist. lib. xiii. cap. 13.

‡ Plin. lib. xiii. cap. 13.

vented, it should follow, contrary to what Isidore advances, that it was not first invented in Memphis, but in Upper Egypt in Seide, whose * language and writing obtained in the earliest ages; though Lucan seems to think with Isidore,

Nondum flumineas Memphis contexere biblos
Noverat —— .. LUCAN. lib. iii.

After the hieroglyphics were lost, perhaps some time before, we knew of nothing the Egyptians adopted so generally as paper; and there were probably † religious reasons that impeded, in those early days, the people from falling upon the most natural material, the skins of beasts. However this may be, it is certain under the Egyptians, naturally averse to novelty and improve-

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* The papyrus is called in Hebrew gomé, which our translators improperly render bulrush. The name of paper, and thence of a book, in Coptic, is djom; the hard g of the Hebrew being sounded like our soft g in the word George. Gome is a generic name of rushes, and those aquatic plants which resemble them. The identity of these two words is evident. The use of the papyrus, as an article of food in the most ancient state of Egyptian society, giving rise to the hieroglyphic mentioned by Horus, is an additional proof, that the Egyptians were right in describing the mean and rude state of their ancestors in the Thebaid. The reader will again observe, that Mr Bruce is misled by the resemblance of the names Saitic and Sahidic; nor is he quite correct in considering the Charta Hieratica and Saitica as the same. He would not have assigned so great antiquity as thrice 830 years to the MS. in his possession, had he consulted on the subject his friend Dr Woide, or reflected that it was a Gnostic treatise, which could not be older than the first age of Christianity. On the other hand, this MS. was probably written not many centuries ago, as it unquestionably belonged to some Coptic convent in the Thebaid, from the ruins of which it might be dug up, and sold to Mr Bruce. It is curious, both on account of its materials, and the language in which it is written; in any other respect, it possesses little value. —T.

† Scruples about cleanness.

ment, paper arrived at no great perfection till taken in hands by the Romans. The Charta Claudia was thirteen inches wide, the Hieratica, or Saitica, eleven, and such is the length of the leaf of my book in the Sahidic dialect, that is, the old Coptic, or Egyptian of Upper Egypt. I have no idea what the Emporetic paper was, which obtained that degree of coarseness and toughness, as to serve shopkeepers to tie up goods, unless it was a very coarse kind, like our brown paper, employed in the same purposes.

If the date of the invention of this useful art of making paper is doubtful, the time when it was lost, or superseded by one more convenient, is as uncertain. Eustathius says it was discussed in his time in 1170. Mabillon endeavours to prove it existed in the 9th, and even that there were some Popish bulls wrote upon it as late as the 11th century. He gives, as instances, a part of St Mark's Gospel preserved at Venice, as being upon papyrus, and the fragment of Josephus at Milan upon cotton paper, while Maffei proves this to be just the reverse, that of St Mark being cotton, and the other he thinks to be indisputably Egyptian papyrus; so that Mabillon's authority, as to the bulls of the Pope, may be fairly questioned.

The several times I have been at these places mentioned, I have never succeeded in seeing any of these pieces. That of St Mark at Venice, I was assured, had been recognized to be cotton paper; it was rendered not legible by the warm saliva of zealots kissing it from devotion, which, I can easily comprehend, must contain a very corrosive quality, and the Venetians now refuse to shew it any more. I have seen two detached leaves of papyrus, but do not know whether there is another book existing, at the present time, but that in my possession; which is very perfect. I

gave Dr Wo'de leave to translate it at Lord North's desire: it is a Gnostic treatise, full of their dreams.

The general figure of this plant Pliny has rightly said resembles a Thyrsus; the head is composed of a number of small grassy filaments, each about a foot long. About the middle, each of these filaments parts into four, and in the point, or partition, are four branches of flowers; the head of this is not unlike an ear of wheat in form but which, in fact, is but a chaffy, silky, soft husk. These heads, or flowers, grow upon the stalk alternately, and are not opposite to, or on the same line, with each other at the bottom.

Pliny * says it has no seed; but this, we may be assured, is an absurdity. The form of the flower sufficiently indicates, that it was made to resolve its head into the covering of one, which is certainly very small, and by its exalted situation, and thickness of the head of the flower, seems to have needed the extraordinary covering it has got, to protect it from the violent hold the wind must have had upon it. For the same reason, the bottom of the filaments composing the head are sheathed in four concave leaves, which keep them close together, and prevent injury from the wind getting in between them.

The stalk is of a vivid green, thickest at the bottom, and tapering up to the top †; it is of a triangular form. In the Jordan, the single side, or apex of the triangle, stood opposed to the stream as the cut water of a boat or ship, or the sharp angle of a buttress of a bridge, by which the pressure of the stream upon the stalk would be greatly diminished. I do not precisely remember how it stood in the lakes in Ethiopia and

* Plin. lib. 13 ut sup.
† Plin. lib. xiii. cap. 11.

Egypt, and only have this remark in the notes I made at the Jordan.

This construction of the stalk of the papyrus seems to reproach Aristotle with want of observation. He says that no plant had either triangular or quadrangular stalks. Here we saw an instance of the contrary in the papyrus, whose stalk is certainly and universally triangular; and we learn from Dioscorides, that many more have quadrangular stalks, or stems of four angles.

It has but one root, which is large and strong *, Pliny says, as thick as a man's arm. So it was probably, when the plant was fifteen feet high, but it is now diminished in proportion, the whole length of the stalk, comprehending the head, being a little above ten; but the root is still hard and solid near the heart, and works with the turning loom tolerably well, as it did formerly when they made cups of it. In the middle of this long root arises the stalk at right angles, so, when inverted, it has the figure of a T, and on each side of the large root there are smaller elastic ones, which are of a direction perpendicular to it, and which, like the strings of a tent, steady it, and fix it to the earth at the bottom. About two feet, or little more, of the lower part of the stalk, is clothed with long, hollow, sword-shaped leaves, which cover each other like scales, and fortify the foot of the plant. They are of a dusky brown, or yellow colour. I suppose the stalk was cut off below, about where these leaves end.

The drawing represents the papyrus as growing. The head is not upright, but is inclined, as from its size it always must be in hot countries, in which alone

* Plin. lib. xiii. cap. 11.

it grows. In all such climates, there is some particular wind that reigns longer than others, and this being always the most violent, as well as the most constant, gives to heavy-headed trees, or plants, an inclination contrary to that from which it blows.

This plant is called el Berdi in Egypt, which signifies nothing in Arabic, and I suppose is old Egyptian. I have been told by a learned gentleman*, that in Syria it is known by the name of Babeer, which approaches more to the sound of papyrus, and paper. This I never heard myself, but give it entirely upon his authority.

BALESSAN, BALM, or BALSAM.

The great value set upon this drug in the East remounts to very early ages; it is coeval with the India trade for pepper, and the beginning of it consequently lost in the darkness of time. We know from Scripture, the oldest history extant, as well as the most infallible, that the Ishmaelites, or Arabian carriers and merchants, trafficking with India commodities into

* Mr Adamson, interpreter to the French factory of Sende: a man of great merit and knowledge in natural history, brother to the naturalist of that name, who has wrote the voyage to Senegal, and particularly an account of the shells of those seas, full of barbarous words, and liberal ideas.

Egypt, brought with them balm as part of the cargo; but the price that they paid for Joseph was silver, and not a barter with any of their articles of merchandize.

Strabo alone, of all the ancients, hath given us the true account of the place of its origin: "Near to this, that historian says, is the most happy land of the Sabeans, and they are a very great people. Among these, frankincense, myrrh, and cinnamon grow, and on the coast, that is about Saba, the balsam also." Among the myrrh trees behind Azab, all along the coast to the Straits of Babelmandeb, is its native country. It grows to a tree above fourteen feet high, spontaneously and without culture, like the myrrh, the coffee, and frankincense tree; they are all equally the wood of the country, and are occasionally cut down and used for fuel. We need not doubt but that it was early transplanted into Arabia, that is, into the south part of Arabia Felix, immediately fronting Azab, the place of its nativity. The high country of Arabia was too cold to receive it, being all mountainous: water freezes there.

There is an anecdote relating to Sir William Middleton, who was surprised and taken prisoner by the Turks in the first attempt to open the trade of the Red Sea, that when about to set out for Sanaa, corruptly called Zeman, the residence of the Imam, or prince of Arabia Felix, he was by the people desired† to take his fur cloak along with him to keep him from the cold. He thought they were ridiculing him upon what he had to suffer from the approaching heat, which he was convinced in the middle of Arabia must be excessive.

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* Dec. 22d, 1610. † Purchas, chap. xi. § 3.

The first plantation that succeeded seems to have been at Petra, the ancient metropolis of Arabia, now called Beder, or Beder Hunein, whence I got one of the specimens from which the present drawing is made.

Josephus*, in the history of the antiquities of his country, says, that a tree of this balsam was brought to Jerusalem by the queen of Saba, and given, among other presents, to Solomon, who, as we know from Scripture, was very studious of all sort of plants, and skilful in the description and distinction of them. Here it seems to have been cultivated and to have thriven, so that the place of its origin came to be forgotten.

Notwithstanding this positive authority of Josephus, and the great probability that attends it, we are not to put it in competition with what we have been told in Scripture; as we have just now seen that the place where it grew, and was sold to merchants, was Gilead in Judea, more than 1750 years before Christ, or 1000 before the queen of Saba; so that on reading the verse, nothing can be more plain than that it had been transplanted into Judea, flourished, and had become an article of commerce in Gilead long before the period Josephus mentions. "And they sat down to eat bread, and they lifted up their eyes and looked, and behold, a company of Ishmaelites came from Gilead with their camels, bearing spicery, and balm, and myrrh; going to carry it down to Egypt†." Now, the spicery, or pepper, was certainly purchased by the Ishmaelites at the mouth of the Red Sea, where was the market for Indian goods, and at the same place they must have bought the myrrh; for that

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* Joseph. Antiquit. lib. v. † Gen. chap. xxxvii. ver. 25.

neither grew nor grows any where else than in Saba or Azabo, east to Cape Gardefan, where were the ports for India, and whence it was dispersed all over the world.

The Ishmaelites, or Arabian carriers, loaded their camels at the mouth of the Red Sea with pepper and myrrh. For reasons not now known to us, they went and completed their cargo with balsam at Gilead, so that, contrary to the authority of Josephus, nothing is more certain, than 1730 years before Christ, and 1000 years before the queen of Saba came to Jerusalem, the balsam-tree had been transplanted from Abyssinia into Judea, and became an article of commerce there, and the place, from which it originally was brought, through length of time, combined with other reasons, came to be forgotten.

Theophrastus, Dioscorides, Pliny Solinus, and Serapion, all say that this balsam came only from Judea. The words of Pliny are, "But to all other odours whatever, the balsam is preferred, produced in no other part but the land of Judea, and even there in two gardens only; both of them belonging to the king, one no more than twenty acres, the other still smaller*."

At this time I suppose it got its name of Balsamum Judaicum, or Balm of Gilead, and thence became an article in merchandize and fiscal revenue, which probably occasioned the discouragement of bringing it any more from Arabia, whence it very probably was prohibited as contraband. We shall suppose thirty acres planted with this tree would have produced more than all the trees in Arabia do at this day. Nor does the plantation of Beder Huncin amount to much more

* Plin. Nat. Hist. lib. xii. cap. 25.

than that quantity; for we are to observe, that even when it had been as it were naturalized in Judea, and acquired a name in the country, still it bore evident marks of its being a stranger there; and its being confined to two royal gardens alone, shews it was maintained there by force and culture, and was by no means a native of the country. And this is confirmed by Strabo, who speaks of it being in the king's palace or garden at Jericho. This place being one of the warmest in Judea, shews likewise their apprehensions about it; so that in Judea, we may imagine it was pretty much in the state of our myrtles in England, which, though cultivated in green houses in all the rest of the island, yet grow beautifully and luxuriantly in Devonshire and Cornwall, the western parts of it.

Diodorus Siculus says, it grew in a valley in Arabia Felix; he should have said on a number of gentle, sloping hills in Arabia Deserta, which have a very small degree of elevation above the plain, but by no means resemble a valley. This place was the scene of three bloody battles between Mahomet and his kinsmen the Beni Koreish, who refused to be converts to his religion, or acknowledge his divine legation. These are at large described by several of the historians of that nation, with circumstances and anecdotes, as interesting and entertaining, as elegantly told. They shew plainly that Mahomet's tribe, the Beni Koreish, did not receive their fanatical manners and disposition from Mahomet and his religion, but were just as obstinate, ignorant, and sanguinary, when they were Pagans, as they were afterwards when converted and become Mahometans. The last of those battles, which was decisive in Mahomet's favour, gave him the sovereignty of Mecca, and was attended

with the extirpation of some of the principal families in this tribe.

At this time the balsam is supposed, by being sold in Judea, and by not being accessible by reason of the commotions in Arabia, to have become almost forgotten in that last place, where the trade from Abyssinia, its native country, was likewise interrupted by this innovation of religion, and by Mahomet's profanation of the Caaba or temple of the sun, the ancient resort of the Sabean merchants carrying on the trade of India. This interval the impostor thought proper for a pretended miracle; he said, that, from the blood of the Beni Koreish slain, there had sprung up this grove of trees, from the juice of which all the true believers on this side received a cure of their wounds, however fatal they appeared, nay, some of them were revived from even death itself. Since that time it has maintained a reputation equal to that which it had in antiquity.

Prosper Alpinus says, that one Meesoner, a eunuch, governor of Cairo in the year 1519, caused bring from Arabia forty plants, which he placed in the garden of Mattareah, where he superintended them. Every day he went to that garden to pay his devotions to the Virgin Mary. It was many times renewed, and has as often perished since. Bellonius says, that in his time there were ten plants at Mattareah, and he is of opinion, that in all ages they grew well in Arabia, which is not true; for those at Beder are constantly supplied with new plants as soon as the old ones decay. There were none existing at Mattareah the two several times I visited Cairo, but there were some of the Christians still living there that remembered one plant in that garden.

There were three productions from this tree very much esteemed among the ancients. The first was

called Opobalsamum, or Juice of the Balsam, which was the finest kind, composed of that greenish liquor found in the kernel of the fruit: The next was Carpobalsamum, made by the expression of the fruit when in maturity. The third was Xylobalsamum, the worst of all; it was an expression or decoction of the small new twigs of a reddish colour. These twigs are still gathered in little faggots and sent to Venice, where I am told they are an ingredient in the Theriac, or of some sort of compound drug made in the laboratories there: But the principal quantity of balsam in all times was produced by incision, as it is at this day. Concerning this, too, many fables have been invented and propagated.

Tacitus says, that this tree was so averse to iron that it trembled upon a knife being laid near it, and some pretend the incision should be made by ivory, glass, or stone. There is no doubt but the more attention there is given to it, and the cleaner the wound is made, the better this balsam will be. It is now, as it probably ever has been, cut by an axe, when the juice is in its strongest circulation in July, August, and the beginning of September. It is then received into a small earthen bottle, and every day's produce gathered and poured into a larger, which is kept closely corked. The Arabs Harb, a noble family of Beni Koreish, are the propietors of it, and of Beder, where it grows. It is a station of the Emir Hadje, or pilgrims going to Mecca, half way between that city and Medina.

Some books speak of a white sort brought by the caravans from Mecca, and called Balsam of Mecca, and others a balsam called that of Judea, but all these are counterfeits or adulterations. The balsam of Judea, which I have already mentioned, was long ago lost, when the troubles of that country withdrew the royal attention from it; but, as late as Galen's time,

it not only existed, but was growing in many places of Palestine besides Jericho, and there is no doubt but it is now totally lost there.

When Sultan Selim made the conquest of Egypt and Arabia in 1516, three pound was then the tribute ordered to be sent to Constantinople yearly, and this proportion is kept up to this day. One pound is due to the governor of Cairo, one pound to the Emir Hadje who conducts the pilgrims to Mecca, half a pound to the basha of Damascus, and several smaller quantities to other officers; after which, the remainder is sold or farmed out to some merchants, who, to increase the quantity, adulterate it with oil of olives and wax, and several other mixtures, consulting only the agreement of colour, without considering the aptitude in mixing: formerly we were told it was done with art, but nothing is easier detected than this fraud now.

It does not appear to me, that the ancients had ever seen this plant, they describe it so variously; some will have it a tree, some a shrub, and some a plant only; and Prosper Alpinus, a modern, corroborates the errors of the ancient, by saying it is a kind of vine, (viticosus). The figure he has given of it is a very bad one, and leaves us entirely in doubt in what class to place it. The defect of the plant in Judea and in Egypt, and the contradiction in the description of the ancients as to its figure and resemblance, occasioned a doubt that all the plants in those two countries, and Arabia also, had been lost in the desolation occasioned by the Mahometan conquest; and a warm dispute arose between the Venetians and Romans, whether the drug used by the former in the Theriac was really the old genuine opobalsamum? The matter was referred to the pope, who directed proper inquiry to be made in Egypt, which turned out entirely in fa-

vour of the Venetians, and the opobalsamum continuing as formerly.

A very learned and tedious treatise was published by Veslingius, in the year 1643, at Padua, where this affair was discussed at full length. As both parties of the disputants seem to argue concerning what it is from the misunderstood reports of what it was, I shall content myself briefly with stating what the qualities of it are, without taking pains to refute the opinions of those that have reported what the opobalsamum is not.

The opobalsamum, or juice flowing from the balsam-tree, at first when it is received into the bottle or vase from the wound from whence it issues, is of a light yellow colour, apparently turbid, in which there is a whitish cast, which I apprehend are the globules of air that pervade the whole of it in its first state of fermentation; it then appears very light upon shaking. As it settles and cools, it turns clear, and loses that milkiness which it first had when flowing from the tree into the bottle. It then has the colour of honey, and appears more fixed and heavy than at first. After being kept for years, it gains a much deeper yellow, and of the colour of gold. I have some of it, which, as I have already mentioned in my travels, I got from the Cadi of Medina in 1768; it is now still deeper in colour, full as much so as the yellowest honey. It is perfectly fluid, and has lost very little either of its taste, smell, or weight. The smell at first is violent and strongly pungent, giving a sensation to the brain like to that of volatile salts when rashly drawn up by an incautious person. This last is in proportion to its freshness; for, being neglected, and the bottle uncorked, it quickly loses this quality, as it probably will at last by age, whatever care is taken of it.

In its pure and fresh state it dissolves easily in water. If dropt on a woollen cloth, it will wash out easily, and leaves no stain. It is of an acrid, rough, pungent taste, is used by the Arabs in all complaints of the stomach and bowels, is reckoned a powerful antiseptic, and of use in preventing any infection of the plague. These qualities it now enjoys, in all probability, in common with the various balsams we have received from the new world, such as the balsam of Tolu, of Peru, and the rest; but it is always used, and in particular esteemed by the ladies, as a cosmetic. As such it has kept up its reputation in the East to this very day. The manner of applying it is this; you first go into the tepid bath till the pores are sufficiently opened, you then anoint yourself with a small quantity, and, as much as the vessels will absorb; never fading youth and beauty are said to be the consequences of this. The purchase is easy enough. I do not hear that it ever has been thought restorative after the loss of either.

The figure I have here given of the balsam may be depended upon, as being carefully drawn, after an observation, from two very fine trees brought from Beder Hunein; the first by the Cadi of Medina at Yambo; the second at Jidda, by order of Yousef Kahl, vizir or minister to the sherriff of Mecca. The first was so deliberately executed, that the second seemed of no service but to confirm me in the exactitude of the first. The tree was 5 feet 2 inches high from where the red root begins, or which was buried in the earth, to where it divides itself first into branches. The trunk at thickest was about 5 inches diameter, the wood light and open, and incapable of polishing, covered with a smooth bark of bluish-white, like to a standard cherry tree in good health, which has not above half that diameter; indeed a part of the bark

is a reddish brown; it flattens at top like trees that are exposed to snow blasts or sea-air, which gives it a stunted appearance. It is remarkable for a penury of leaves. The flowers are like that of the acacia tree, white and round, only that three hang upon three filaments, or stalks, where the acacia has but one. Two of these flowers fall off and leave a single fruit; the branches that bear this are the shoots of the present year; they are of a reddish colour, and tougher than the old wood: it is these that are cut off and put into little faggots, and sent to Venice for the Theriac. when bruised or drawn by fire, and formerly these made the Xylobalsamum.

Concerning the vipers which, Pliny says, were frequent among the Balsam trees, I made very particular inquiry; several were brought me alive, both to Yambo and Jidda. Of these I shall speak in another place, when I give the figure, and an account of that animal so found.

SASSA, MYRRH, AND OPOCALPASUM.

At the time when I was on the borders of the Tal-Tal, or Troglodyte country, I endeavoured to procure branches and bark of the myrrh tree, enough preserved to be able to describe it and make a design; but the length and ruggedness of the way the heat of the weather, and the carelessness and want of resources

of naked savages, always disappointed me. In those goat-skin bags into which I had often ordered them to put small branches, I always found the leaves mostly in powder; some few that were entire seemed to resemble much the acacia vera, but were wider towards the extremity, and more pointed immediately at the end. In what order the leaves grew I never could determine. The bark was absolutely like that of the acacia vera; and among the leaves I often met with a small, straight, weak thorn, about two inches long.

These were all the circumstances I could combine relative to the myrrh-tree, too vague and uncertain to risk a drawing upon, when there still remained so many desiderata concerning it; and as the king was obstinate not to let me go thither after what had happened to the surgeon's mate and boat's crew of the Elgin Indiaman *, I was obliging to abandon the drawing of the myrrh-tree to some more fortunate traveller, after having in vain attempted to procure it at Azab, as I have already mentioned.

At the same time that I was taking these pains about the myrrh, I had desired the savages to bring me all the gums they could find, with the branches and bark of the trees that produced them. They brought me at different times some very fine pieces of incense, and at another time a very small quantity of a bright colourless gum, sweeter on burning than incense, but no branches of either tree, though I found this latter afterwards in another part of Abyssinia. But at all times they procured me quantities of gum of an even and close grain, and of a dark brown colour, which was produced by a tree called Sassa, and

* They were murdered at Azab; see Vol. II. p. 1[illegible].

twice I received branches of this tree in tolerable order, and of these I made a drawing.

Some weeks after, while walking at Emfras, a Mohometan village, whose inhabitants are myrrh merchants, I saw a large tree with the whole upper part of the trunk, and the large branches, so covered with bosses and knobs of gum, as to appear monstrously deformed; and inquiring farther about this tree, I found that it had been brought, many years before, from the myrrh country, by merchants, and planted there for the sake of its gum, with which these Mahometans stiffened the blue Surat cloths they get damaged from Mocha, to trade in with the Galla and Abyssinians. Neither the origin of the tree which they called Sassa, nor the gum, could allow me to doubt a moment that it was the same as what had been brought to me from the myrrh country, but I had the additional satisfaction to find the tree all covered over with beautiful crimson flowers of a very extraordinary and strange construction. I began then a drawing anew, with all that satisfaction known only to those who have been conversant in such discoveries.

I took pieces of the gum with me; it is very light. Galen complains, that, in his time, the myrrh was often mixed with a drug, which he calls Opocalpasum, by a Greek name; but what the drug was, is totally unknown to us at this day, as nothing similar to the Greek name is found in the language of the country. But as the only view of the savage, in mixing another gum with his myrrh, must have been to increase the quantity, and as the great plenty in which this gum is produced, and its colour, make it very proper for this use, and, above all, as there is no reason to think there is another gum-bearing tree of equal quality in the country where the myrrh grows, it seems to me

next to a proof, that this must have been the opocalpasum of Galen.

I must, however, confess, that Galen says the opocalpasum was so far from being an innocent drug, that it was a mortal poison, and had produced very fatal effects. But as those Troglodytes, though now more ignorant than formerly, are still well acquainted with the properties of their herbs and trees, it is not possible that the savage, desiring to increase his sales, would mix them with a poison that must needs diminish them. And we may therefore, without scruple, suppose that Galen was mistaken in the quality ascribed to this drug, and that he might have imagined, from tenderness to the profession, that people died of the opocalpasum, who perhaps really died of the physician: First, Because we know of no gum, or resin, that is a mortal poison: Secondly, Because, from the construction of its parts, gum could not have the activity which violent poison has; and, considering the small quantities in which myrrh is taken, and the opocalpasum could have been but in an inconsiderable proportion to the myrrh, to have killed, it must have been a very active poison indeed: Thirdly, These accidents, from a known cause, must have brought myrrh into disuse, as certainly as the Spaniards mixing arsenic with bark would banish that drug when we saw people die of it. Now this never was the case; it maintained its character among the Greeks and the Arabs, and so down to our days; and a modern physician, Van Helmont, thinks it might make man immortal, if it could be rendered perfectly soluble in the human body. Galen, then, was mistaken as to the poisonous quality of the opocalpasum. The Greek physician knew little of the natural history of Arabia, less still of that of Abyssinia; and we, who have followed them, know nothing of either.

This gum being put into water, swells and turns white, and loses all its glue; it very much resembles gum adragant in quality, and may be eaten safely. This specimen came from the Troglodyte country in the year 1771. The Sassa, the tree which produces the opocalpasum, does not grow in Arabia. Arabian myrrh is easily known from Abyssinian by the following method: Take a handful of the smallest pieces found at the bottom of the basket where the myrrh was packed, and throw them into a plate, and just cover them with water a little warm, the myrrh will remain for some time without visible alteration, for it dissolves slowly; but the gum will swell to five times its original size, and appear so many white spots amidst the myrrh.

Emfras, as I have said, is a large village, something more than twenty miles south of Gondar, situated upon the face of a hill of considerable height above the lake Tzana, of which, and all its islands, it has a very distinct and pleasant view; it is divided from the lake by a large plain, near which is the island Mitraha, one of the burying-places of the kings. The inhabitants of the lower town, close on the banks of the small river Arno, are all Mahometans, many of them men of substance, part of them the king's tent-makers, who follow the camp, and pitch his tent in the field; the others are merchants to the myrrh and frankincense country, that is, from the east parallel of the kingdom of Dancali to the point Cape Gardefan, or Promontorium Aromatum; they also bring salt from the plains, on the west of the kingdom of Dancali, where fossile salt is dug; it is on the S. E. border of the kingdom of Tigre. These Mahometans trade also to the Galla, to the westward of the Nile; their principal commodity is myrrh, and damaged cargoes of blue Surat cloth, which they unfold and clean, then stiffen

with gum, and fold them in form of a book as when then were new.

This gum, which is called Sassa, they at first brought from the myrrh country behind Azab, till ingenious and sagacious people had carried plants of the tree to their different villages, where they have it growing in great perfection, and more than supply the uses of the merchants.

This tree grows to a great height, not inferior to that of an English elm; that from which this draught was made was about two feet diameter. The gum grows on all sides of the trunk, in quantity enough almost to cover it, in form of large globes, and so it does on all the principal branches. These lumps are sometimes so large as to weigh two pound, though naturally very light.

The bark of the tree is thin, and of a bluish colour, not unlike that of a cherry-tree when young, or rather whiter. The wood is white and hard, only the young branches which carry the flower are red. The leaves are joined to the sides of the small branches by a small pedicle of considerable strength; the leaves are two and two, or opposite to each other, and have no single leaf at the point; they are strongly varnished, both on one side and the other, the back rather lighter than the foreside of the leaf. The branches that carry the leaves have about an inch of the stalk bare, where it is fixed to the larger branch. There are generally fourteen leaves, each of about three quarters of an inch long. At the top of the branch are knots, out of which come three small stalks, bare for about an inch and a half, then having a number of small tubes, which, when they open at the top, put forth a long pistil from the bottom of the tube. The top of the tube, divided into five segments, or petals, arrives about one third up the pistil, and makes the figure of a calix, or

perianthium, to it. From this tube proceeds a great number of very small capillaments, of a pink colour, at the end of each of which hangs a purple stigma. At the top of this pistil is a large bunch of still finer fibres, or capillaments, with stigmata likewise, and at the end the pistil is rounded, as if forming a fruit. Without a very distinct drawing, it would be difficult to make a description that should be intelligible.

Nothing can be more beautiful, or more compounded, than the formation of this flower, though it has no odour; the head is composed of about thirty of these small branches now described, which make a very beautiful mass, and is of a pink colour of different shades. At sun-set, the leaves on each side of the branch shut, face to face, like the sensitive tribe. I never saw any seed or fruit that it bore, nor any thing like the rudiments of seed, unless it be that very small rotundity that appears at the end of the pistil, which seems to bear no proportion to so large a tree.

ERGETT Y'DIMMO.

The two beautiful shrubs, which I have here given to the reader, are called by the name of Ergett, which we may suppose, in Abyssinian botany, to be the generic name of the mimosa, as both of these have the same name, and both of the same family, of which there are many varieties in Abyssinia.

This first is called the Bloody Ergett, as we may suppose from the pink filaments, of which this beautiful and uncommon flower is in part composed, and which we may therefore call Mimosa Sanguinea. The upper part of the flower is composed of curled, yellow filaments, and the bottom a pink of the same structure. I never saw it in any other state. Before the blossoms spread, it appears in the form here exhibited. The pink, or lower part, in its unripe state, is composed of green tubercles, larger and more detached than where the yellow flower is produced, whose tubercles are smaller and closer set together. I need not say the leaves are of the double pinnated kind, as that, and every thing else material, can be learned from the figure, full as perfectly as if the flower was before them; none of the parts, however trifling and small, being neglected in the representation, and none of them supposed or placed there out of order, for ornament, or any other cause whatever; a rule which I would have the reader be persuaded is invariably observed in every article represented in this collection, whether tree or plant, beast, bird, or fish.

ERGETT EL KRONE.

The next of this species of Ergett, or Mimosa, is called in Abyssinia Ergett el Krone, or the horned Ergett: I apprehend the figure of the pods has given it that appellation. Its flower, in size and form, very

much resembles the acacia vera, only that it is attached to the branch by a long and strong woody stalk, which grows out at the bottom of the branch bearing the leaves, and is sheltered as in a case by the lower part of it. The branches of it are all covered with very short, strong, sharp-pointed thorns, whose point is inclined backward towards the root. Its pods are covered with a prickly kind of hair, which, when touched, stick in your fingers, and give very uneasy sensations. The pods are divided into thirteen divisions, in each of which are three round seeds, hard and shining, of a dusky brownish colour. The flower has scarcely any smell, nor do I know that it is of any utility whatever. Both these beautiful shrubs were found upon the banks of the river Arno, between Emfras and the lake Tzana. The soil is black mould, with a great mixture, or composition, of rotten putrified leaves, thinly covering the rock in the temperate part of Abyssinia. What I have to observe of both these shrubs is, that they shut their leaves upon the violent rains of winter, and are never fully expanded till the sun and fair season again return.

ENSETE.

The Ensete is an herbacious plant. It is said to be a native of Narea, and to grow in the great swamps and marshes in that country, formed by many rivers rising there, which have little level to run to either

ocean. It is said that the Galla, when transplanted into Abyssinia, brought, for their particular use, the coffee-tree, and the Ensette; the use of neither of which was before known. However, the general opinion is, that both are naturally produced in every part of Abyssinia, provided there is heat and moisture. It grows and comes to great perfection at Gondar, but it most abounds in that part of Maitsha and Goutto west of the Nile, where there are large plantations of it, and is there, almost exclusive of any thing else, the food of the Galla inhabiting that province: Maitsha is nearly upon a dead level, and the rains have not slope to get off easily, but stagnate and prevent the sowing of grain. Vegetable food would therefore be very scarce in Maitsha, were it not for this plant.

Some who have seen my drawing of this plant, and at the same time found the banana in many parts of the east, have thought the Ensete to be a species of the Musa. This, however, I imagine, is without any sort of reason. It is true, the leaf of the banana resembles that of the Ensete; it bears figs, and has an excrescence from its trunk, which is terminated by a conical figure, chiefly differing from the Ensete in size and quantity of parts, but the figs of the banana are in shape of a cucumber; and this is the part which is eaten. This fig is sweet, though mealy, and of a taste highly agreeable. It is supposed to have no seeds, though, in fact, there are four small hard seeds in every fig belonging to it. But the figs of the Ensete are not eatable; they are of a tender, soft substance; watery, tasteless, and in colour and consistence similar to a rotten apricot; they are of a conical form, crooked a little at the lower end, about an inch and a half in length, and an inch in breadth where thickest. In the inside of these is a large stone, half an inch long, of the shape of a bean or cushoo-nut, of a dark brown colour, and this con-

tains a small seed, which is seldom hardened into fruit, but consists only of skin.

The long stalk that bears the figs of the Ensete springs from the centre of the plant, or rather is the body or solid part of the plant itself. Upon this, where it begins to bend, are a parcel of loose leaves, then grows the fig upon the body of the plant without any stalk; after which the top of the stalk is thick set with small leaves, in the midst of which it terminates the flower in form of the artichoke: whereas, in the banana, the flower, in form of the artichoke, grows at the end of that shoot, or stalk, which proceeds from the middle of the plant, the upper part of which bears the row of figs.

The leaves of the Ensete are a web of longitudinal fibres closely set together; the leaves grow from the bottom, and are without stalks; whereas the banana is in shape like a tree, and has been mistaken for such. One half of it is divided into a stem, the other is a head formed of leaves, and in place of the stem that grows out of the Ensete, a number of leaves, rolled together round like a truncheon, shoots out of the heart of the banana, and renews the upper as the under leaves fall off; but all the leaves of the banana have a long stalk; this fixes them to the trunk, which they do not embrace by a broad base, or involucrum, as the Ensete does.

But the greatest differences are still remaining. The banana has, by some, been mistaken for a tree of the palmaceous tribe, for no other reason but a kind of similarity in producing the fruit on an excrescence, or stalk, growing from the heart of the stem; but still the musa is neither woody nor perennial; it bears fruit but once; and, in all these respects, it differs from trees of the palmaceous kind, and, indeed, from all sort of trees whatever. The Ensete, on the contrary, has no

naked stem, no part of it is woody: the body of it, for several feet high, is esculent; but no part of the banana can be eaten. As soon as the stalk of the Ensete appears perfect and full of leaves, the body of the plant turns hard and fibrous, and is no longer eatable; before, it is the best of all vegetables. When boiled, it has the taste of the best new wheat-bread not perfectly baked.

The drawing which I have given the reader, was of an Ensete ten years old. It was then very beautiful, and had no marks of decay. As for the pistil, stamina, and ovarium, they are drawn with such attention, and so clearly expressed by the pencil, that it would be lost time to say more about them. I have given one figure of the plant clothed with leaves, and another of the stem stript of them, that the curious may have an opportunity of further investigating the difference between this and the musa.

When you make use of the Ensete for eating, you cut it immediately above the small detached roots, and perhaps a foot or two higher, as the plant is of age. You strip the green from the upper part till it becomes white; when soft, like a turnip well boiled, if ate with milk or butter, it is the best of all food, wholesome, nourishing, and easily digested.

We see in some of the Egyptian antique statues, the figure of Isis sitting between some branches of the banana tree, as it is supposed, and some handfuls of ears of wheat; you see, likewise, the hippopotamus ravaging a quantity of banana tree. Yet the banana is merely adventitious in Egypt; it is a native of Syria; it does not even exist in the low hot country of Arabia Felix, but chuses some elevation in the mountains where the air is temperate, and is not found in Syria further to the southward than lat. 34°.

After all, I do not doubt that it might have grown

in Mattareah, or in the gardens of Egypt or Rosetto; but it is not a plant of the country, and could never have entered into the list of their hieroglyphics; for this reason, it could not figure any thing permanent or regular in the history of Egypt, or its climate. I therefore imagine, that this hieroglyphic was wholly Ethiopian, and that the supposed banana, which, as an adventitious plant, signified nothing in Egypt, was only a representation of the Ensete, and that the record in the hieroglyphic of Isis and the Ensete tree was something that happened between harvest, which was about August, and the time the Ensete tree became to be in use, which is in October.

The hippopotamus is generally thought to represent a Nile that has been so abundant as to be destructive. When, therefore, we see upon the obelisks the hippopotamus destroying the banana, we may suppose it meant, that the extraordinary inundation had gone so far, as not only to destroy the wheat, but also to retard or hurt the growth of the Ensete, which was to supply its place. I do likewise conjecture, that the bundle of branches of a plant, which Horus Apollo says the ancient Egyptians produced as the food on which they lived before the discovery of wheat, was not the papyrus, as he imagines, but this plant, the Ensete, which retired to its native Ethiopia upon a substitute being found better adapted to the climate of Egypt.

KOL-QUAL.

In that memorable day, when leaving the Samhar, or low flat parched country which forms the sea-coast of Abyssinia, and turning westward, we came to the foot of that stupendous mountain Taranta, which we were to pass, in order to enter into the high land of Abyssinia, we saw the whole side of that prodigious mountain covered, from top to bottom, with this beautiful tree. We were entering a country where we daily expected wonders, and therefore, perhaps, were not so much surprised as might have been supposed at so extraordinary a sight. The fruit was ripe, and being carried on the top of the branches, the trees, that stood thick together, appeared to be covered with a cloth, or veil, of the most vivid crimson colour.

The first thing that presented itself was the first shoot of this extraordinary tree. It was a single stalk, about six inches measured across, in eight divisions, regularly and beautifully scolloped and rounded at the top, joining in the centre at three feet and a half high. Upon the outside of these scollops were a sort of eyes, or small knots, out of every one of which came five thorns, four on the sides, and one in the centre, scarce half an inch long, fragil, and of no resistance, but exceedingly sharp and pointed. Its next procers is to put out a branch from the first or second scollop near the top, others succeed from all directions; and this stalk, which is soft and succulent, of the consistence of the aloe, turns by degrees hard and ligneous, and, after a few years, by multiplying its branches, assumes the form as in the second plate. It is then a tree, the

lower part of which is wood; the upper part, which is succulent, has no leaves; these are supplied by the fluted, scolloped, serrated, thorny sides of its branches. Upon the upper extremity of these branches grow its flowers, which are of a golden colour, rosaceous, and formed of five round or almost oval petala; this is succeeded by a triangular fruit, first of a light green, with a slight cast of red, then turning to a deep crimson, with streaks of white both at top and bottom. In the inside it is divided into three cells, with a seed in each of them; the cells are of a greenish white, the seed round, and with no degree of humidity, or moisture about it; yet the green leaves contain a quantity of bluish watery milk, almost incredible.

Upon cutting two of the finest branches of a tree in its full vigour, a quantity of this issued out, which I cannot compute to be less than four English gallons; and this was so exceedingly caustic, that, though I washed the sabre that cut it immediately, the stain has not yet left it.

When the tree grows old, the branches wither, and, in place of milk, the inside appears to be full of powder, which is so pungent, that the small dust which I drew, upon striking a withered branch, seemed to threaten to make me sneeze to death, and the touching of the milk with my fingers, excoriated them as if scalded with boiling water; yet I everywhere observed the wood-pecker piercing the rotten branches with its beak, and eating the insects, without any impression upon its olfactory nerves.

The only use the Abyssinians make of this is for tanning hides, at least for taking off the first hair. As we went west, the tree turned poor, the branches were few, seldom above two or three ribs, or divisions, and these not deeply indented; whereas those of Taranta had frequently eight. We afterwards saw some of

them at the source of the Nile, in the cliff where the village of Geesh is situated, but, though upon a very good ground, they did not seem to thrive; on the contrary, where they grew on Taranta it was sandy, stony, poor earth, scarce deep enough to cover the rock; but I suspect they received some benefit from their vicinity to the sea.

Some botanists, who have seen the drawing, have supposed this to be the euphorbia officinarum of Linnæus; but, without pretending to great skill in this matter, I apprehend there would be some objection to this supposition: First, on account of the flower, which is certainly rosaceous, composed of several petals, and is not campaniform: Secondly, That it produces no sort of gum, either spontaneously or upon incision, at any period of its growth; therefore I imagine, that the gum which comes from Africa in small pieces, first white on its arrival, then turning yellow by age, is not the produce of this tree, which, it may be depended upon, produces no gum whatever.

Juba the younger is said, by Pliny, to have given this name to the plant, calling it after his own physician, brother to Musa, physician to Augustus. We need not trouble ourselves with what Juba says of it: he is a worse naturalist, and worse historian, than the Nubian geographer. *

* The merits of Juba are very little known, on account of his works having perished. The Nubian geographer was merely a compiler; but Juba had advantages of a higher kind than he possessed, from being hereditary king of the country, and an original observer.—L.

RACK.

This is a large tree, and seems peculiar to warm climates. It abounds in Arabia Felix, in Abyssinia, that is, in the lower part of it, and in Nubia. The first place I saw it in was in Raback, a port in the Red Sea, where I discovered this singularity, that it grew in the sea within low-water mark. When we arrived at Masuah, in making a plan of the harbour, I saw a number of these in two islands, both uninhabited, and without water; the one called Shekh Seide, the other Toulahout. These two islands are constantly overflowed by salt water, and though they are strangers to fresh, they yet produce large Rack-trees, which appear in a flourishing state, as if planted in a situation designed for them by nature.

The Arabians, it is said, make boats of this tree. Its wood is so hardened by the sea, and also so bitter in taste, that no worm whatever will touch it. Of this tree the Arabians also make tooth-picks; these they sell in small bundles at Mecca, and are reputed to be favourable to the teeth, gums, and breath.

The reader will have observed frequent mention of some trees found in the desert, which our camels would not eat. These are the Rack-tree, and the doom, or palma thebaica cuciofera*. These grow where they find salt springs in the sand; the desert being so impregnated with fossile salt in every part of

* Theophrast. Hist. Plant. lib. iii. cap. 8, lib. iv. cap. 2. Plin. Nat. Hist. lib. xiii. cap. 7. J. Bauh. lib. iii. cap. 89.

it that great blocks and strata of it are seen everywhere appearing above ground, especially about latitude 18°.

The Rack something resembles the ash on its first appearance, though in the formation of its parts it is widely different. Its bark is white and polished, smooth, and without furrows. Its trunk is generally seven or eight feet before it cleaves into branches. I have seen it above 24 feet in height, and two feet in diameter.

Its leaves are, two and two, set on different sides, that is, each two perpendicular to each other alternately. The small branches that bear flowers, part from the inside of the leaf, and have the same position with the leaves; that is, suppose the lowest pair of leaves and branches are on the east or west side of the tree, the pair above them will be on the north and south, and the next to these will be on the west, as before. The leaves are long, and very sharp-pointed; in the inside, a deep green; and in the out, a dirty white, of a green cast: they have no visible ribs, either in the inside or out. The cup is a perianthium of four petals, which closely confine the flower, and is only a little flat at the top. The flower is composed of four petals deeply cut, in the interstices of which is a small green fruit, divided by a fissure in the middle; its colour is deep orange, with lights of gold colour, or yellow, throughout it. It has no smell, tastes very bitterly, and is never seen to be frequented by the bees. It is probable, that a tree of this kind, though perhaps of another name, and in greater perfection, and therefore more fit for use, may be found in some of our West India Islands between lat. 15° and 18°, especially where there are salt springs and marshes.

GIR GIR, OR GESHE EL AUBE.

THIS species of grass is one of the acquisitions which my travels have procured to botany. It was not before known; and the seed has not, as far as I know, produced any plant but in the garden of the king of France. It grows plentifully near Ras el Feel, not far from the banks of the large river Guangue, of which I have spoken in my return from Abyssinia into Egypt. It begins to shoot in the end of April, when it first feels the humidity of the air. It advances then speedily to its full height, which is about three feet four inches. It is ripe in the beginning of May, and decays, if not destroyed by fire, very soon afterwards.

The leaf is long, pointed, narrow, and of a feeble texture. The stock from which it shoots produces leaves in great abundance, which soon turn yellow and fall to the ground. The goats, the only cattle these miserable people have, are very fond of it, and for it abandon all other food while it is within their reach. On the leaves of some plants I have seen a very small glutinous juice, like to what we see upon the leaves of the lime or the plane, but in much less quantity: this is of the taste of sugar.

From the root of the branch arises a number of stalks, sometimes two, but never, as far as I have seen, more than three. The flower and seed are defended by a wonderful perfection and quantity of small parts. The head, when in its maturity, is of a purplish brown. The plate represents it in its natural size, with its constituent parts dissected, and separated with very great

attention. As they are many, each have a number affixed to them.

MALE-FLOWER DESCRIBED.

THE 1st is the flower in its perfect state separated from its stalk. The 2d is the upper case. The 3d is the case, or sheath, opposite to the foregoing. The 4th are inner cases which inclose the three stamina, with the beard and the arista. The 5th is its stile. The 6th its stamina, with the two cases that inclose them. The 7th is the sheath, with its ear and its beard.

FEMALE-FLOWER DESCRIBED.

THE 8th is the rudiment of the fruit, with two stigmata. The 9th, the perfect flower.

KANTUFFA.

THIS thorn, like many men we meet daily in society, has wrought itself into a degree of reputation and respect, from the noxious qualities and power of doing ill which it possesses, and the constant exertion of these powers. The Abyssinians, who wear coarse

cotton cloths, the coarsest of which are as thick as our blankets, the finest equal to our muslin, are in the same degree annoyed with it. The soldier screens himself by a goat's, leopard's or lion's skin, thrown over his shoulders, of which it has no hold. As his head is bare, he always cuts his hair short before he goes to battle, lest his enemy should take advantage of it; but the women, wearing their hair long, and the great men, whether in the army, or travelling in peace, being always clothed, it never fails to incommode them, whatever species of raiment they wear. If their cloak is fine muslin, the least motion against it puts it all in rags; but if it is a thick soft cloth, as those are with which men of rank generally travel, it buries its thorns, great and small, so deep in it, that the wearer must either dismount and appear naked, which to principal people is a great disgrace, or else much time will be spent before he can disengage himself from its thorns. In the time when one is thus employed, it rarely fails to lay hold of you by the hair, and that, again, brings on another operation, full as laborious, but much more painful, than the other.

In the course of my history, when speaking of the king, Tecla Haimanout II., first entering Gondar after his exile into Tigre, I gave an instance that shewed how dangerous it was for the natives to leave this thorn standing; and of such consequence is the clearing of the ground thought to be, that every year when the king marches, among the necessary proclamations this is thought to be a very principal one, "Cut down the Kantulla in the four quarters of the world, for I do not know where I am going." This proclamation, from the abrupt style of it, seems at first absurd to strangers, but when understood, is full of good sense and information. It means, do not sit gossiping with your hands before you, talking; The king is going to

Damot, he certainly will go to Gojam, he will be obliged to go to Tigre. That is not your business, remove nuisances out of the way, that he may go as expeditiously as possible, or send to every place where he may have occasion.

The branches of the Kantuffa stand two and two upon the stalk; the leaves are disposed two and two likewise, without any single one at the point, whereas the branches bearing the leaves part from the stalk: at the immediate joining of them are two thick thorns, placed perpendicular and parallel alternately; but there are also single ones distributed in all the interstices throughout the branch.

The male plant, which I suppose this to be, has a one-leaved perianthium, divided into five segments, and this falls off with the flower. The flower is composed of five petals, in the middle of which rise ten stamina, or filaments, the outer row shorter than those of the middle, with long stigmata, having yellow farina upon them. The flowers grow in a branch, generally between three and four inches long, in a conical disposition, that is, broader at the base than the point. The inside of the leaves are a vivid green, in the outside much lighter. It grows in the form of a bush, with a multitude of small branches rising immediately from the ground, and is generally seven or eight feet high. I saw it when in flower only, never when bearing fruit. It has a very strong smell, resembling that of the small scented flower called mignionet, sown in vases and boxes in windows, or rooms where flowers are kept.

The wild animals, both birds and beasts, especially the Guinea-fowl, know how well it is qualified to protect them. In this shelter, the hunter in vain could endeavour to molest them, were it not for a hard-haired dog, or terrier of the smallest size, who, being de-

fended from the thorns by the roughness of his coat, goes into the cover, and brings them and the partridges alive, one by one to his master.

GAGUEDI.

The Gaguedi is a native of Lamalmon; whether it was not in a thriving state, or whether it was the nature of the tree, I know not, but it was thick and stunted, and had but few branches: it was not above nine feet high, though it was three feet in diameter. The leaves and flower, however, seemed to be in great vigour; and I have here designed them all of their natural size as they stood.

The leaves are long, and broader as they approach the end. The point is obtuse. They are of a dead green, not unlike the willow, and placed alternately one above the other on the stalk. The calix is composed of many broad scales, lying one above the other, which operates by the pressure upon one another, and keeps the calix shut before the flower arrives at perfection. The flower is monopetalous, or made of one leaf; it is divided at the top into four segments; where these end it is covered with a tuft of down, resembling hair; and this is the case at the top also. When the flower is young, and unripe, they are laid regularly, so as to inclose one another in a circle. As they grow old and expand, they seem to lose their regular form,

and become more confused, till at last, when arrived at its full perfection they range themselves parallel to the lips of the calix, and perpendicular to the stamina, in the same order as a rose. The common receptacle of the flower is oblong, and very capacious, of a yellow colour, and cover d with small leaves like hair. The stile is plain, simple, and upright, and covered at the bottom with a tuft of down, and is below the common receptacle of the flower.

As thi flower is of a complicated nature, I have given two figures of it; the one where the flower is seen in face, the other in the outside. The stamina are three short filaments, inserted in the segment of the flower near the summit.

I have observed, in the middle of a very hot day, that the flowers unbend themselves more, the calix, seems to expand, and the whole flower to turn itself towards the sun, in the same manner as does the sunflower. When the branch is cut, the flower dries as it were instantaneously, so that it seems to contain very little humidity.

WANZEY.

This tree is very common throughout all Abyssinia. I do not know the reason, but all the towns are full of them; every house in Gondar has two or three planted round it, so that when viewed first from the

heights, it appears like a wood, especially all the season of the rains; but very exactly, on the 1st of September, for years together, in a night's time, it was covered with a multitude of white flowers. Gondar, and all the towns about, then appeared as covered with white linen, or with new fallen snow. This tree blosoms the first day the rains cease. It grows to a considerable magnitude, is from 18 to 20 feet high. The trunk is generally about three feet and a half from the ground; it then divides into four or five thick branches, which have, at least, 60° inclination to the horizon, and not more. These large branches are generally bare; for half way up the bark is rough and furrowed. They then put out a number of smaller branches, are circular and flattish at the top, of a figure like some of our early pear trees. The cup is a single-leaved perianthium, red, marked very regularly before it flowers; but when the flower is out, the edges of the cup are marked with irregular notches, or segments, in the edge, which by no means correspond in numbers or distances, to those that appeared before the perfection of the flower.

The flower itself consists of one leaf of the funnel-fashioned kind, spreads, and, when in its full perfection, folds back at the lips, though it has in some flowers marks or depressions which might appear like segments; yet they are not such, but merely accidental, and the edge of most of the flowers is perfectly even, without any mark of separation.

The pistil consists of a very feeble thread; in the top it is bisected, or divided into two; its apex is covered with a small portion of yellow dust. There are two, and sometimes three, of these divisions. The fruit is fully formed in the cup while the flower remains closed, and like a kind of tuft, which falls off, and the pistil still remains on the point of the fruit; is

at first soft, then hardens like a nut, and is covered with a thin, green husk. It then dries, hardens into a shell, and withers. The leaf is of a dark green, without varnish, with an obtuse point; the ribs few but strong, marked both within and without. The outside is a greenish yellow, without varnish also.

I do not know that any part of this tree is of the smallest use in civil life, though its figure and parts seem to be too considerable not to contain useful qualities if fairly investigated by men endued with science. I have several times mentioned in the history of the Galla, that this and the coffee-tree have divine honours paid them by each and all of the seven nations. Under this tree the king is chosen; under this tree he holds his first council, in which he marks his enemies, and the time and manner in which his own soldiers are to make their irruption into their country. His sceptre is a bludgeon made of this tree, which, like a mace, is carried before him wherever he goes; It is produced in the general meetings of the nation, and is called Buco.

The wood is close and heavy, the bark thick; there is then a small quantity of white wood, the rest is dark brown and reddish, not unlike the laburnum, and the buco is stript to this last appearance, and always kept plentifully anointed with butter*.

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* Warzi is a name given by the Abyssinians to the tree which is, in our translation of the Bible, called *cedar*; Song of Solom. ch. 5 v. 15. The most common word is *arz*; but they pay little regard to the true names of the plants mentioned in Scripture, because they know nothing of the botany of Palestine. The name of the Galla sceptre is pronounced Bukko, with the first vowel short, and has been transferred to men as a title. Casmati Bukko was a favourite general of Suseus or Sultan Segued, king of Habbesh.—T.

FAREK, or BAUHINIA ACUMINATA.

This beautiful shrub was found on the banks of a brook, which, falling from the west side of the mountain of Geesh down the south face of the precipice where the village is situated, is the first water that runs southward into the lake Gooderoo, in the plain of Assoa. It is the water we employed for common uses, not daring to touch that of the Nile, unless for drinking and dressing our food; it grew about 20 yards from this water, on the side of the cliff, not 400 yards from the fountain of the Nile itself. The name it bears here is Farek, which is, I suppose, given it from the division of the leaf.

This shrub is composed of several feeble branches: to what height it grows I do not know, having never seen it before, nor were there many others where I found it. The longest branch of this was not four feet high. It grew on good black mold, but of no great depth, having at the bottom a gritty or sandy stone, and seemed in full perfection. The branch is of its natural size; on one of the smaller or collateral branches is the flower full blown, with two others that are buds. The parts are separated and designed with care.

The first figure is the flower in its entire state, seen in front, the stamina of course fore-shortened. The second is an angular three quarter view of the calix. The third is a back view of the calix. The fourth is the calix inclosing the stamina and pistil, round which I bet they form a fruit or grain. The fifth is the flower

stript of its calix, where is seen the germ, the stamina, and the pistil. The sixth is the stamina magnified to twice their size. The seventh is the lower leaf. The eighth, the upper leaf of the flower. The ninth, the germ, or rudiment of the fruit, with the pistil joined to it, at the bottom of which there is a small cavity. The tenth is the seed or fruit entire. The eleventh represents the inside of the seed cut in two.

The leaves of this shrub are of a vivid green, and are joined to the branch by a long pedicle, in the inside of which are the rudiments of another, which I suppose begin to sprout when the large one is injured or falls off.

Though very little acquainted with the scientific part of botany myself, its classes, genera, and species, and still less jealous of my reputation in it, I cannot conceive why my single attention, in charging myself with a number of seeds in distant countries, and giving part to the garden at Paris, should lead to a conclusion that I was so absolutely uninstructed in the science for which at least I had shewn this attachment, that I could not distinguish the plant before us from the acacia vera. Is the knowledge of botany so notoriously imperfect in England, or the pre-eminence in it so clearly established in France, as to authorise such a presumption of ignorance against a person, who, from his exertions and enterprise, should hold some rank in the republic of letters among travellers and discoverers?

A compliment was paid me by the Count de Buffon, or by superior orders, in return for the articles I had presented to the king's cabinet and garden at Paris, that the plants growing from the seeds which I had brought from Abyssinia should regularly, as they grew to perfection, be painted, and sent over to me at London. The compliment was a handsome one,

and I was very sensible of it: it would have contributed more to the furnishing the king's garden with plants than many lectures on botany, ex cathedra, will ever do.

But it was not necessary to shew his knowledge for the sake of contrasting it with my ignorance, that M. Jussieu says this bauhinia is by Mr Bruce taken for an acacia vera. The acacia vera is a large, wide-spreading, thorny, hard, red-wooded, rough-barked, gum-bearing tree. Its flower, though sometimes white, is generally yellow; it is round or globular, composed of many filaments or stamina; it is the Spina Egyptiaca, its leaves, in shape and disposition, resembling a mimosa; in Arabic it is called Saiel, Sunt, and Gerar; and if M. de Jussieu had been at all acquainted with the history of the east, he must have known it was the tree of every desert, and consequently that I must be better acquainted with it than almost any traveller or botanist now alive. Upon what reasonable ground then could he suppose, upon my bringing to him a rare and elegant species of bauhinia, which probably he had not before seen, that I could not distinguish it from an acacia, of which I certainly brought him none?

A large species of Mullein likewise, or, as he is pleased to term it, Bouillon Blanc, he has named Verbascum Abyssinicum; and this the unfortunate Mr Bruce, it seems, has called an aromatic herb growing upon the high mountains. I do really believe, that M. de Jussieu is more conversant with the Bouillon Blancs than I am; my Bouillons are of another colour; it must be the love of French cookery, not English taste, that would send a man to range the high mountains for aromatic herbs, to put in his Bouillon, if the Verbascum had been really one of these.

Although I have sometimes made botany my amusement, I do confess it never was my study, and I believe from this the science has reaped so much the more benefit. I have represented to the eye, with the utmost attention, by the best drawings in natural history ever yet published, and to the understanding in plain English, what I have seen as it appeared to me on the spot, without tacking to it imaginary parts of my own, from preconceived systems of what it should have been, and thereby creating varieties that never existed.

When I arrived at the Lazaretto at Marseilles, the Farentet, as it is called in Nubia, or the Guinea-worm, the name it bears in Europe, having been broken by mismanagement in my voyage from Alexandria, had retired into my leg and festered there. The foot, leg, and thigh, swelled to a monstrous size, appearances of mortification followed, and the surgeon, with a tenderness and humanity that did honour to his skill, declared, though reluctantly, that if I had been a man of weak nerves, or soft disposition, he would have prepared me for what was to happen by the interposition of a friend or a priest; but as from my past sufferings he presumed my spirit was of a more resolute and firmer kind, he thought saving time was of the utmost consequence, and therefore advised me to resolve upon submitting to an immediate amputation above the knee. To limp through the remains of life, after having escaped so many dangers with bones unbroken, was hard, so much so, that the loss of life itself seemed the most eligible of the two; for the bad habit of body in which I found myself in an inveterate disease, for which I knew no remedy, and joined to this, the prejudice that an Englishman generally has against foreign operators in surgery, all persuaded me, that, after undergoing amputation, I had but very little chance of

recovery. Besides, long and great suffering, want of sleep, want of food, and the weakness that attends lying long in sick-bed, had gradually subdued the natural desire and anxiety after life: every day death seemed to be a lesser evil than pain. Patience however, strong fomentations, and inward applications of the bark, at length cured me.

It was immediately after receiving my melancholy sentence, that thinking of my remaining duties, I remembered I had carried abroad with me an order from the king to procure seeds for his garden. Before I had lost the power of direction, I ordered Michael, my Greek servant, to take the half of all the different parcels and packages that were lying by me, made up for separate uses, and pack them so as they might be sent to Sir William Duncan, the king's physician, then in Italy, to be conveyed by him to Lord Rochfort, secretary of state. I by the same conveyance accompanied these with a short letter, wrote with great difficulty,—that as it appeared, beyond leaving room for hope, that my return was to be prevented by an unexpected disease, I begged his Majesty to receive these as the last tender of my duty to him.

Michael, who never cared much for botany, at no period was less disposed to give himself trouble about it than now; his master, friend, and patron was gone, as he thought; he was left in a strange country; he knew not a word of the language, nor was he acquainted with one person in Marseilles, for we had not yet stirred out of the lazaretto. What became of the seeds for a time I believe neither he nor I knew: but, when he saw my recovery advancing, fear of reproof led him to conceal his former negligence. He could neither read nor write; so that the only thing he could do was to put the first seed that came to hand in the first envelope, either in parchment or paper, that had

writing upon the back of it, and, thus selected, the seeds came into the hands of M. de Jussieu at Paris. By this operation of Michael, the verbascum became an aromatic herb growing on the highest mountains, and the bauhinia acuminata became an acacia vera.

The present of the drawings of the Abyssinian plants was really, as it was first designed, a compliment; but it turned out just the contrary, for, in place of expecting the publication that I was to make, of which they would naturally be a part, the gates of the garden were thrown open, and every dabbler in botany that could afford pen, ink, and paper, was put in possession of those plants and flowers, at a time when I had not said one word upon the subject of my travels.

Whether this was owing to M. de Jussieu, M. de Thouin, or M. Daubenton, to all, or to any one of them, I do not know, but I beg they will for a moment consider the great impropriety of the measure. I suppose it would be thought natural, that a person delineating plants in a foreign country with such care, risk, and expence, as I have done, should wish to bring home the very seeds of those plants he had delineated in preference to all others: supposing these had been the only seeds he could have brought home, and generosity and liberality of mind had led him to communicate part of them to M. de Jussieu, we shall further say, this last-mentioned gentleman had planted them, and when the time came, engraved, and published them, what would he think of this manner of repaying the traveller's attention to him? The bookseller, that naturally expected to be the first that published these plates, would say to the traveller whose food he was to buy, "This collection of natural history is not new; it has been printed in Sweden,

Denmark, and France, and part of it is to be seen in every monthly magazine!" Does M. de Jussieu think, that, after having been once so treated, any traveller would ever give one seed more to the king's garden? he certainly would rather put them into the fire; he must do so if he was a reasonable man, for otherwise, by giving them away he is certainly ruining his own work, and defeating the purposes for which he had travelled.

When I first came home, it was with great pleasure I gratified the curiosity of the whole world, by shewing them each what they fancied most curious. I thought this was an office of humanity to young people, and to those of slender fortunes, or those who, from other causes, had no opportunity of travelling. I made it a particular duty to attend and explain to men of knowledge and learning that were foreigners, every thing that was worth the time they bestowed upon considering the different articles that were new to them, and this I did at great length to the Count de Buffon, and Mons. Guenеau de Montbeliard, and the very amiable and accomplished Madame d'Aubenton. I cannot say by whose industry, but it was in consequence of this friendly communication, a list or inventory (for they could give no more) of all my birds and beasts was published before I was well got to England.

From what I have seen of the performance of the artists employed by the cabinet, I do not think that they have anticipated in any shape the merit of my drawings, especially in birds and in plants; to say nothing milder of them, they are in both articles infamous; the birds are so dissimilar from the truth, that the names of them are very necessarily wrote under, or over them, for fear of the old mistake of taking them for something else. I condescend upon

the Erkoom as a proof of this. I gave a very fine specimen of this bird, in great preservation, to the king's collection; and though I shewed them the original, they had not genius enough to make a representation that could with any degree of certainty be promised upon for a guess. When I was at Paris, they had a woman, who in place of any merit, at least that I could judge of, was protected, as they said, by the queen, and who made, what she called, Drawings; those of plants were so little characteristic, that it was, strictly speaking, impossible, without very great consideration, to know one plant from another: while there was, at the same time, a man of the greatest merit, M. de Seve, absolutely without employment; though, in my opinion, he was the best painter of every part of natural history either in France or England.

KUARA.

This beautiful tree, now presented to the reader, is the production of the south and south west parts of Abyssinia. It is very frequent, and, with the ebony, almost the only wood in the province of Kuara, of which it bears the name; and indeed in all Fazuclo, Nuba, and Guba, and the countries where there is gold. It is here designed in its natural size, both leaves, flowers, and fruit, the whole so plainly, that it

is needless to descant upon its particular parts, well known to naturalists. It is what they call Coralloden-dron probably from the colour of its flowers, or of its fruit, both equal in colour to coral.

Its fruit is a red bean, with a black spot in the middle of it, which is inclosed in a round capsula, or covering, of a woody nature, very tough and hard. This bean seems to have been in the earliest ages used for a weight of gold among the Shangalla, where that metal is found all over Africa; and by repeated experiments, I have found that, from the time of its being gathered, it varies very little in weight, and may perhaps have been the very best choice that therefore could have been made between the collectors and the buyers of gold.

I have said this tree is called Kuara, which signifies the sun. The bean is called Carat, from which is derived the manner of esteeming gold as so many carats fine. From the gold country in Africa it passed to India, and there came to be the weight of precious stones, especially diamonds; so that to this day in India we hear it commonly spoken of gold or diamonds, that they are so many carats fine, or weight. I have seen these beans likewise from the West-Indian islands. They are just the same size, but, as far as I know, are not yet applied to any use there.

WALKUFFA.

This tree grows in the Kolla, or hottest part of Abyssinia. It does not flower immediately after the rains, as most trees in Abyssinia do, that is, between the beginning of September and the Epiphany, when the latter rains in November still fall in violent periodical showers, but it is after the Epiphany, towards the middle of January, that it first appears covered with blossoms. However beautiful, it has no smell, and is accounted destructive to the bees; for which reason it is rooted out and destroyed in those countries that pay their revenue in honey. It resembles the Kentish cherry-tree in appearance, especially if that tree has but a moderate, not overspreading top. The wood immediately below its bark is white, but under that a brownish yellow, something like cedar; the old trees that I have seen turn darker, and are not unlike to the wood of the laburnum, or pease-cod tree. The natives say it does not swim in water. This, however, I can contradict upon experiment. The wood, indeed, is heavy, but still it swims.

Although the painting of this tree, which I here exhibit, is neither more nor less accurate in the delineation of its parts than every other design of natural history given in this work to the public, yet the inimitable beauty of the subject itself has induced me to bestow much more pains upon it than any other, I have published, and, according to my judgment, it is the best executed in this collection. All its parts are so distinctly figured, the flower exposed in such variety of directions, that it supersedes the necessity of de-

scribing it to the skilful botanist, who will find here every thing he possibly could in the flower itself. This is a great advantage; for if the parts had been ever so studiously and carefully reserved in a *hortus siccus*, as they are spread upon paper, it would have been impossible not to have lost some of its finer members, they are so fragile, as I have often experienced in different attempts to dry and preserve it.

The flower consists of five petals, part of each overlapping or supporting the other, so that it maintains its regular figure of a cup till the leaves fall off, and does not spread and disjoin first, as do the generality of these rosaceous flowers before they fall to the ground. Its colour is a pure white, in the midst of which is a kind of sheath, or involucrum, of a beautiful pink colour, which surrounds the pistil, covering and concealing about one-third of it. Upon the top of this is a kind of impalement, consisting of five white upright threads, and between each of these are disposed three very feeble stamina of unequal lengths, which make them stand in a triangular oblong form, covered with yellow farina.

The pistil is a yellow tube, dividing at the top into five segments, and fixed at the bottom in what appears to be the rudiment of a fruit; but I never saw this in any state of perfection, and the Abyssinians say it never produces any thing but a small, round, black seed, concerning which I can say nothing further. The perianthium consists of five sharp pointed segments, which inclose the flower when not arrived to maturity, in a conical pod of a light green colour, which colour it likewise keeps in its more advanced state when spread. I do not know any other name it has but that of Walkuffa, nor do I know the signification of that name in any language.

WOOGINOOS, OR BRUCEA ANTIDYSENTERICA.

This shrub, the branch of which is before us, is a production of the greatest part of Abyssinia, especially the sides of the vallies in the low country, or Kolla. It is indeed found on the north side of Debra Tzai, where you first descend into the Kolla. This drawing was made at Hor Cacamoot, in Ras el Feel, where the Wooginoos grows abundantly, and where dysenteries reign continually, Heaven having put the antidote in the same place with the poison.

Some weeks before I left Gondar I had been very much tormented with this disease, and had tried both ways of treating it, the one by hot medicines and astringents, the other by the contrary method of diluting. Small doses of ipecacuanha under the bark had for several times procured me temporary relief, but relapses always followed. My strength began to fail, and, after a severe return of this disease, I had, at my ominous mansion, Hor Cacamoot, the valley of the shadow of death, a very unpromising prospect, for I was now going to pass through the kingdom of Sennaar in the time of the year when that disease most rages.

Sheba, chief of the Shangalla, called Ganjar, on the frontiers of Kuara, had at this time a kind of embassy or message to Ras el Feel. He wanted to burn some villages in Atbara belonging to the Arabs Jehaina, and wished Yasine might not protect them. They often came and sat with me, and one of them hearing of my complaint, and the apprehension I annexed to

it seemed to make very light of both; and the reason was, he found at the very door this shrub, the strong and ligneous root of which, nearly as thick as a parsnip, was covered with a clean, clear, wrinkled bark, of a light-brown colour, and which peeled easily off the root. The root was without fibres to the very end, where it split like a fork into two thin divisions. After having cleared the inside of it of a whitish membrane, he laid it to dry in the sun, and then would have bruised it between two stones, had we not shewn him the easier and more expeditious way of powdering it in a mortar.

The first dose I took was about a heaped tea-spoonful in a cup of camel's milk; I took two of these in a day, and then in the morning a tea-cup of the infusion in camel's milk warm. It was attended the first day with a violent drought; but I was prohibited from drinking either water or bouza. I made privately a drink of my own; I took a little boiled water which had stood to cool, and in it a small quantity of spirits. I afterwards used some ripe tamarinds in water, which I thought did me harm. I cannot say I found any alteration for the first day, unless a kind of hope that I was growing better; but the second day I found myself sensibly recovered. I left off laudanum and ipecacuanha, and resolved to trust only to my medicine. In looking at my journal, I think it was the sixth or seventh day that I pronounced myself well, and, though I had returns afterwards, I never was reduced to the necessity of taking one drop of laudanum, although before I had been very free with it. I did not perceive it occasioned any extraordinary evacuation, nor any remarkable symptom but that continued thirst, which abated after it had been taken some time.

In the course of my journey through Sennaar, I saw that all the inhabitants were well acquainted with the virtues of this plant. I had prepared a quantity pounded into powder, and used it successfully everywhere. I thought that the mixing of a third of bark with it produced the effect more speedily, and, as we had now little opportunity of getting milk, we made an infusion in water. I tried a spirituous tincture, which I do believe would succeed well. I made some for myself and servants, a spoonful of which we used to take when we found symptoms of our disease returning, or when it was raging in the place in which we chanced to reside. It is a plain, simple bitter, without any aromatic or resinous taste. It leaves in your throat and palate something of roughness, resembling ipecacuanha.

This shrub was not before known to botanists. I brought the seeds to Europe, and it has grown in every garden, but has produced only flowers, and never came to fruit. Sir Joseph Banks, president of the Royal Society, employed Mr Miller to make a large drawing from this shrub as it had grown at Kew. The drawing was as elegant as could be wished, and did the original great justice. To this piece of politeness Sir Joseph added another, of calling it, after its discoverer's name, Brucea Antidysenterica. The present figure is from a drawing of my own on the spot, at Ras el Feel.

The leaf is oblong and pointed, smooth, and without collateral ribs that are visible. The right side of the leaf is a deep green, the reverse very little lighter. The leaves are placed two and two upon the branch, with a single one at the end. The flowers come chiefly from the point of the stalk from each side of a long branch. The cup is a perianthium divided into four segments. The flower has four petals, with a strong

rib down the centre of each. In place of a pistil there is a small cup, round which, between the segments of the perianthium, and the petala of the flower, four feeble stamina arise, with a large stigma of a crimson colour, of the shape of a coffee-bean, and divided in the middle.

CUSSO, BANKESIA ABYSSINICA.

THE Cusso is one of the most beautiful trees, as also one of the most useful. It is an inhabitant of the high country of Abyssinia, and indigenous there; I never saw it in the Kolla, nor in Arabia, nor in any other part of Asia or Africa. It is an instance of the wisdom of Providence, that this tree does not extend beyond the limits of the disease of which it was intended to be the medicine or cure.

The Abyssinians of both sexes, and at all ages, are troubled with a terrible disease, which custom, however, has enabled them to bear with a kind of indifference. Every individual, once a month, evacuates a large quantity of worms; these are not the tape-worm, or those that trouble children; but they are the sort of worm called Ascarides; and the method of promoting these evacuations, is by infusing a handful of dry Cusso flowers in about two English quarts of bouza, or the beer they make from teff; after it has been steeped all night, the next morning it is fit for

use. During the time the patient is taking the Cusso, he makes a point of being invisible to all his friends, and continues at home from morning till night. Such too was the custom of the Egyptians upon taking a particular medicine. It is alledged that the want of this drug is the reason why the Abyssinians do not travel; or if they do, most of them are short lived.

The seed of this is very small, more so than the semen santonicum, which seems to come from a species of wormwood. Like it the Cusso sheds its seed very easily; from this circumstance, and its smallness, no great quantity of the seed is gathered, and therefore the flower is often substituted. It is bitter, but not nearly so much as the semen santonicum.

The Cusso grows seldom above twenty feet high, very rarely straight, generally crooked or inclined. It is planted always near churches, among the cedars which surround them, for the use of the town or village. Its leaf is about 2½ inches long, divided into two by a strong rib. The two divisions, however, are not equal, the upper being longer and broader than the lower; it is a deep unvarnished green, exceedingly pleasant to the eye, the fore part covered with soft hair or down. It is very much indented, more so than a nettle leaf, which in some measure it resembles, only is narrower and longer.

These leaves grow two and two upon a branch; between each two are the rudiments of two pair of young ones, prepared to supply the others when they fall off, but they are terminated at last with a single leaf at the point. The end of this stalk is broad and strong, like that of a palm-branch. It is not solid, like the gerid of the date-tree, but opens in the part that is without leaves, about an inch and a half from the bottom; and out of this aperture proceeds the

flower. There is a round stalk, bare for about an inch and a quarter, from which proceed crooked branches, to the end of which are attached single flowers; the stalk that carries these proceeds out of every crook or geniculation; the whole cluster of flowers has very much the shape of a cluster of grapes, and the stalks upon which it is supported very much resemble the stalk of the grape; a very few small leaves are scattered through the cluster of flowers.

The flower itself is of a greenish colour, tinged with purple; when fully blown, it is altogether of a deep red or purple; the flower is white, and consists of five petals; in the midst is a short pistil with a round head, surrounded by eight stamina of the same form, loaded with yellow farina. The cup consists of five petals, which much resemble another flower; they are rounded at the top, and nearly of an equal breadth every way

The bark of the tree is smooth, of a yellowish white, interspersed with brown streaks, which pass through the whole body of the tree. It is not firm or hard, but rather stringy and reedy. On the upper part, before the first branch of leaves set out, are rings round the trunk, of small filaments, of the consistence of horse hair; these are generally fourteen or sixteen in number, and are a very remarkable characteristic belonging to this tree.

As the figure of this plant is true and exact beyond all manner of exception, I cannot but think it may be discovered in latitudes 11° or 12° north, in the West Indies or America; and having been found a gentle, safe, and efficacious medicine in Abyssinia, it is not doubted but the superior skill of our physicians would turn it to the advantage of mankind in general, when used here in Europe. In consequence of the esta-

blished prerogatives of discoverers, I have named this beautiful and useful tree after Sir Joseph Banks, President of the Royal Society.

TEFF.

This grain is commonly sown all over Abyssinia, where it seems to thrive equally on every sort of ground; from it is made the bread which is commonly used throughout Abyssinia. The Abyssinians, indeed, have plenty of wheat, and some of it of an excellent quality: They likewise make as fine wheat-bread as any in the world, both for colour and for taste: but the use of wheat-bread is chiefly confined to people of the first rank. On the other hand, Teff is used by all sorts of people, from the king downwards; and there are kinds of it which are esteemed fully as much as the wheat. The best of these is as white as flour, exceedingly light, and easily digested. There are others of a browner colour, and some nearly black; this last is the food of soldiers and servants. The cause of this variation of colour is manifold; the teff that grows on light ground having a moderate degree of moisture, but never dry; the lighter the earth is in which it grows, the better and whiter the teff will be; the husk too is thinner. The teff, too, that ripens before the heavy rains, is usually whiter and finer; and a great deal depends upon sifting the husk from

it, after it is reduced to flour, by bruising or breaking it in a stone mill. This is repeated several times with great care, in the finest kind of bread, which is found in the houses of all people of rank or substance. The manner of making it is by taking a broad earthen jar, and having made a lump of it with water, they put it into an earthen jar, at some distance from the fire, where it remains till it begins to ferment, or turn sour; they then bake it into cakes of a circular form, and about two feet in diameter. It is of a spongy, soft quality, and a sourish not disagreeable taste. Two of these cakes a-day, and a coarse cotton cloth once a-year, are the wages of a common servant.

At their banquets of raw meat, the flesh being cut in small bits, is wrapt up in pieces of this bread, with a proportion of fossile salt and Cayenne pepper. Before the company sits down to eat, a number of these cakes of different qualities are placed one upon the other, in the same manner as our plates; and the principal people, sitting first down, eat the white teff; the second, or coarser sort, serves the second-rate people that succeed them; and the third is for the servants. Every man, when he has done, dries or wipes his fingers upon the bread which he is to leave for his successor, for they have no towels; and this is one of the most beastly customs of the whole.

The teff bread, when well toasted, is put into a large jar, after being broken into small pieces, and warm water poured upon it. It is then set by the fire, and frequently stirred for several days, the mouth of the jar being close covered. After being allowed to settle three or four days, it acquires a sourish taste, and is what they call bouza, or the common beer of the country. The bouza in Atbara is made in the same manner; only, instead of teff, cakes of barley-meal are

employed; both are very bad liquors, but the worst is that made of barley.

The plant is herbaceous; from a number of weak leaves proceeds a stalk of about twenty-eight inches in length, not perfectly straight, smooth, but joined or knotted at particular distances. This stalk is not much thicker than that of a carnation or jillyflower. About eight inches from the top, a head is formed of a number of small branches, upon which it carries the fruits and flowers; the latter of which is small, of a crimson colour, and scarcely perceptible by the naked eye, but from the opposition of that colour. The pistil is divided into two, seemingly attached to the germ of the fruit, and has at each end small capillaments forming a brush. The stamina are three in number, two on the lower side of the pistil, and one on the upper. These are, each of them, crowned with two oval stigmata, at first green, but after, crimson. The fruit is formed in a capsula, consisting of two conical, hollow leaves, which, when closed, seems to compose a small conical pod, pointed at the top. The fruit, or seed, is oblong, and is not so large as the head of the smallest pin; yet it is very prolific, and produces these seeds in such quantity, as to yield a very abundant crop in the quantity of meal.

Whether this grain was ever known to the Greeks and Romans, we are not informed. Indeed, the various grains made use of in antiquity, are so lamely described, that, except a few of the most common, we cannot even guess at the rest. Pliny mentions several of them, but takes no notice of any of their qualities, but medicinal ones; some he specifies as growing in Gaul, others in the Campania of Rome, but makes little mention of those of Ethiopia or Egypt. Among these there is one which he calls uphe, but says not whence it came: the name would induce us to believe that

it was teff; but we can only venture this as unsupported conjecture. But it is very improbable, connected as Egypt and Ethiopia were from the first ages, both by trade and religion, that a grain of such consequence to one nation should be utterly unknown to the other. It is not produced in the low or hot country, the Kolla, that is, in the borders of it; for no grain can grow, as I have already said, in the Kolla or Mazaga itself; but in the place of Teff, in these borders, there grows a black grain called Tocusso. The stalk of this is scarce a foot long; it has four divisions where the grain is produced, and seems to be a species of the meiem msalib, or gramen crucis, the grass of the cross. Of this a very black bread is made, eaten only by the poorer sort; but though it makes worse bread, I think it makes better bouza.

Some have thought, that from the frequent use of Teff, comes that disease of worms which I have mentioned in the article Cusso. But I am inclined to think this is not the case, because the Gibbertis, or Mahometans, born in Abyssinia, all use teff in the same proportion as the Christians, yet none of these are troubled with worms. And from this I should be led to think, that this disease arises rather from eating raw meat, which the Mahometans do not, and therefore are not affected with this disorder as the Christians are.

OF QUADRUPEDS.

I believe there is in the world no country which produces a greater number, or variety of quadrupeds, whether tame or wild, than Abyssinia. As the high country is now perfectly cleared of wood, by the waste made in that article from the continual march of armies, the mountains are covered to the very top with perpetual verdure, and most luxuriant herbage.

The long rains in summer are not suddenly absorbed by the rays of the sun: a thick veil defends the ground when it is in the zenith, or near it, affording heat to promote vegetation, without withering it by destroying the moisture; and by this means a never-failing store of provender is constantly provided for all sorts of cattle. Of the tame or cow-kind, great abundance present themselves everywhere, differing in size, some having horns of various dimensions; some without horns at all, differing also in the colour and length

of their hair, or by having bosses upon their backs, according as their pasture or climate vary. There are kinds also destined to various uses; some for carriage, like mules or asses; some to be rode upon, like horses; and these are not the largest of that kind, but generally below the middle size. As for that species bearing the monstrous horns, of which I have often spoke in my narrative, their size is not to be estimated by that of their horns; the animal itself is not nearly so big as a common English cow; the growth of the horn is a disease which proves fatal to them, because encouraged for a peculiar purpose. Whether it would be curable, has not yet, I believe, been ever ascertained by experiment. But the reader may with confidence assure himself, that there are no such animals as carnivorous bulls in Africa, and that this story has been invented for no other purpose but a desire to exhibit an animal worthy to wear these prodigious horns. I have always wished that this article, and some others of early date, were blotted out of our philosophical transactions; they are absurdities to be forgiven to infant physics and to early travels, but they are unworthy of standing among the cautious well-supported narratives of our present philosophers. Though we may say of the buffaloe, that it is of this kind, yet we cannot call it a tame animal here; so far from that, it is the most ferocious in the country where it resides; this, however, is not in the high temperate part of Abyssinia, but in the sultry Kolla, or vallies below, where, without hiding himself, as wild beasts generally do, as if conscious of superiority of strength, he lies at his ease among large spreading shady trees, near the clearest and deepest rivers, or the largest stagnant pools of the purest water. Notwithstanding this, he is in his person as dirty and slovenly, as he is fierce, brutal, and indocile; he seems to main-

tain among his own kind the same character for manners that the wolf does among the carnivorous tribe.

But what is very particular is, this is the only animal kept for giving milk in Egypt. And though apparently these are of the same species, and came originally from Ethiopia, their manners are so entirely changed by their migration, difference of climate or of food, that, without the exertion of any art to tame them, they are milked, conducted to and fro, and governed by children of ten years old, without apprehension, or any unlucky accident having ever happened.

Among the wild animals are prodigious numbers of the gazel, or antelope kind; the bohur, sassa, fecho, and madoqua, and various others. These are seldom found in the cultivated country, or where cattle pasture, as they chiefly feed on trees; for the most part, they are found in broken ground near the banks of rivers, where, during the heat of the day, they conceal themselves, and sleep under cover of the bushes. They are still more numerous in those provinces whose inhabitants have been extirpated, and the houses ruined or burnt in time of war, and where wild oats, grown up so as to cover the whole country, afford them a quiet residence, without being disturbed by man. Of this I have mentioned a very remarkable instance in the first attempt I made to discover the source of the Nile (Vol. V. p. 117.) The hyæna is still more numerous. Enough has been said about him. I apprehend there are two species. There are few varieties of the dog or fox kind. Of these the most numerous is the deep, or, as he is called, the jackal. This is precisely the same in all respects as the deep of Barbary and Syria, who is heard hunting in great numbers, and howling in the evening and morning. The true deep, as far as appears to me, is

not yet known, at least I never yet saw in any author a figure that resembled him. The wild boar, smaller and smoother in the hair than that of Barbary or Europe, but differing in nothing else, is met frequently in swamps or banks of rivers covered with wood. As he is accounted unclean in Abyssinia, both by Christians and Mahometans, consequently not persecuted by the hunter, both he and the fox should have multiplied; but it is probable they, and many other beasts, when young, are destroyed by the voracious hyæna.

The elephant, rhinoceros, giraffa, or camelopardalis, are the inhabitants of the low hot country; nor is the lion, or leopard, faadh, which is the panther, seen in the high or cultivated country. There are no tigers in Abyssinia, nor, as far as I know, in Africa; it is an Asiatic animal; for what reason some travellers, or naturalists, have called him the tiger-wolf, or mistaken him altogether for the tiger, is what I cannot discover. Innumerable flocks of apes, and baboons of different kinds, destroy the fields of millet everywhere; these, and an immense number of common rats, make great destruction in the country and harvest. I never saw a rabbit in Abyssinia, but there is plenty of hares; this, too, is an animal which they reckon unclean; and not being hunted for food, it should seem they ought to have increased to greater numbers. It is probable, however, that the great quantity of eagles, vultures, and beasts of prey, has kept them within reasonable bounds. The hippopotamus and crocodile abound in all the rivers, not only of Abyssinia, but as low down as Nubia and Egypt. There is no good figure or description extant, as far as I know, of either of these animals: some unforeseen accident always thwarted and prevented my supplying this deficiency. There are many of the asp

kind in the low country, towards the frontiers of Atbara, but no Zebras; these are the inhabitants of Fazuclo and Narea.

RHINOCEROS.

NATURALISTS seem now in general to be agreed that there are two species of this quadruped, the first having two horns upon his nose, the second one. It is also a generally received opinion, that these different species are confined to distant places of the old continent; that with one horn is thought to be exclusively an inhabitant of Asia, that with two horns to be only found in Africa.

Whether this division be right in all its parts, I shall not advance. That there is a rhinoceros in Asia with one horn, is what we positively know; but that there is none of the other species in that part of the continent, does not appear to me as yet so certain. Again, there is no sort of doubt, that though the rhinoceros with two horns is an inhabitant of Africa, yet it is as certain that the species with one horn is often found in that country likewise, especially in the eastern part, where is the myrrh and cinnamon country, towards Cape Gardefan, which runs into the Indian ocean, beyond the Straits of Babelmandeb. And if I were to credit the accounts which the natives of the respective countries have given me, I should be induced to be-

lieve that the rhinoceros of the kingdom of Adel had but one horn. They say this is the case where little rain falls, as in Adel, which, though within the tropics, is not liable to that several months deluge, as is the inland part of the country more to the westward. They say further, that all that woody part, inhabited by Shangalla, corresponding to Tigre and Sire, is the haunt of the rhinoceros with two horns. Whether this is really the case, I do not pretend to aver; I give the reader the story with the authority. I think it is probable; but as in all cases where very few observations can be repeated, as in this, I leave him entirely to the light of his own understanding.

The animal represented in this drawing is a native of Tcherkin, near Ras el Feel, of the hunting of which I have already spoken, in my return through the desert to Egypt; and this is the first drawing of the rhinoceros with a double horn that has ever yet been presented to the public. The first figure of the Asiatic rhinoceros, the species having but one horn, was painted by Albert Durer, from the life, from one of those sent from India by the Portuguese in the beginning of the sixteenth century. It was wonderfully ill-executed in all its parts, and was the origin of all the monstrous forms under which that animal has been painted, ever since, in all parts of the world. Several modern philosophers have made amends for this in our days; Mr Parsons, Mr Edwards, and the Count de Buffon, have given good figures of it from life; they have indeed some faults, owing chiefly to preconceived prejudices and inattention. These, however, were rhinoceroses with one horn, all Asiatics. This, as I have before said, is the first that has been published with two horns; it is designed from the life, and is an African; but as the principal difference is in the horn, and as the manner

of this beast are, I believe, very faithfully described, and common to both species, I shall only note what I think is deficient in his history, or what I can supply from having had an opportunity of seeing him alive and at freedom in his native woods.

It is very remarkable, that two such animals as the elephant and rhinoceros should have wholly escaped the description of the sacred writers. Moses, and the children of Israel, were long in the neighbourhood of the countries that produced them, both while in Egypt and in Arabia. The classing of the animals into clean and unclean, seems to have led the legislator into a kind of necessity of describing, in one of the classes, an animal, which made the food of the principal Pagan nations in the neighbourhood. Considering the long and intimate connection Solomon had with the south coast of the Red Sea, it is next to impossible that he was not acquainted with it; as both David his father, and he, made plentiful use of ivory, as they frequently mention in their writings, which, along with gold, came from the same part. Solomon, besides, wrote expressly upon zoology, and, we can scarcely suppose, was ignorant of two of the principal articles of that part of the creation, inhabitants of the great continent of Asia, east from him, and that of Africa on the south, with both which territories he was in constant correspondence.

There are two animals, named frequently in Scripture, without naturalists being agreed what they are: The one is the behemoth, the other the reem, both mentioned as the types of strength, courage, and independence on man, and as such exempted from the ordinary lot of beasts, to be subdued by him, or reduced under his dominion. Though this is not to be taken in a literal sense, for there is no animal without the fear or beyond the reach of the power of man,

we are to understand this as applicable to animals possessed of strength and size so superlative, as that, in these qualities, other beasts bear no proportion to them.

The behemoth, then, I take to be the elephant; his history is well known, and my only business is with the reem, which I suppose to be the rhinoceros. The derivation of this word, both in the Hebrew and the Ethiopic, seems to be from erectness, or standing straight. This is certainly no particular quality in the animal itself, who is not more, or even so much, erect as many other quadrupeds, for in its knees it is rather crooked; but it is from the circumstance and manner in which his horn is placed. The horns of all other animals are inclined to some degree of parallelism with the nose, or *os frontis* The horn of the rhinoceros alone is erect and perpendicular to this bone, on which it stands at right angles, thereby possessing a greater purchase, or power, as a lever, than any horn could possibly have in any other position.

This situation of the horn is very happily alluded to in the sacred writings: "My horn shalt thou exalt like the horn of an unicorn*:" and the horn here alluded to is not wholly figurative, as I have already taken notice of in the course of my history, but was really an ornament, worn by great men in the days of victory, preferment, or rejoicing, when they were anointed with new, sweet, or fresh oil; a circumstance which David joins with that of erecting the horn.

Some authors, for what reason I know not, have made the reem, or unicorn, to be of the deer or antelope kind, that is, of a genus whose very character is

* Psalm xcii. 10.

fear and weakness, very opposite to the qualities by which the reem is described in Scripture. Besides, it is plain the reem is not of the class of clean quadrupeds; and a late modern traveller, very whimsically, takes him for the leviathan, which certainly was a fish. It is impossible to determine which is the silliest opinion of the two. Balaam, a priest of Midian, and so in the neighbourhood of the haunts of the rhinoceros, and intimately connected with Ethiopia, for they themselves were shepherds of that country, in a transport, from contemplating the strength of Israel, whom he was brought to curse, says, they had as it were the strength of the reem *. Job † makes frequent allusion to his great strength, and ferocity, and indocility. He asks, "Will the reem be willing to serve thee, or abide by thy crib?" that is, Will he willingly come into thy stable, and eat at thy manger? And again, "Canst thou bind the reem with a band in the furrow; and will he harrow the vallies after thee ‡?" In other words, Canst thou make him go in the plow or harrows?

Isaiah ||, who of all the prophets seems to have known Egypt and Ethiopia the best, when prophecying about the destruction of Idumea, says, that the reem shall come down with the fat cattle; a proof that he knew his habitation was in the neighbourhood. In the same manner as when foretelling the desolation of Egypt, he mentions as one manner of effecting it, the bringing down the fly § from Ethiopia, to meet the cattle in the desert, and among the bushes, and destroy them there, where that insect did not ordinarily come but

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* Numb. chap. xxiii. ver. 22.
† Job, chap. xxxix. ver. 9.
‡ Job, chap. xxxix. ver. 10.
|| Isaiah, chap. xxxiv. ver. 7.
§ Isaiah, chap. vii. ver. 18, 19.

on command*, and where the cattle fled every year to save themselves from that insect.

The rhinoceros, in Geez, is called Arwe Harish, and in the Amharic, Auraris, both which names signify the large wild beast with the horn. This would seem as if applied to the species that had but one horn. On the other hand, in the country of the Shangalla, and in Nubia adjoining, he is called Girnamgirn, or horn upon horn; and this would seem to denote that he had two. The Ethiopic text renders the word reem, Arwe Harish, and the Septuagint translates it, Monoceros, or Unicorn.

If the Abyssinian rhinoceros had invariably two horns, it seems to me improbable the Septuagint would call him Monoceros; especially as they must have seen an animal of this kind exposed at Alexandria in their time, then first mentioned in history, at an exhibition given by Ptolemy Philadelphus on his accession to the crown, before the death of his father, of which we have already made mention.

The principal reason of translating the word reem, Unicorn, and not Rhinoceros, is from a prejudice that he must have had but one horn. But this is by no means so well founded, as to be admitted as the only argument for establishing the existence of an animal which never has appeared, after the search of so many ages. Scripture speaks of the horns of the unicorn†; so that, even from this circumstance, the reem may comprehend both species. It is something remarkable, that, notwithstanding Alexander's expedition into India, this quadruped was not known to Aristotle‡. Strabo and Athenæus both speak of

* Exod. chap. viii. ver 22.

† Deut. chap. xxxiii. 17. Psalm xxii 21.

‡ This shews that the Mosaic pavement of Præneste is not a

him from report, as having been seen in Egypt. Pausanias calls him an Ethiopic bull; in the same manner the Romans called the elephants *Lucani boves*, Lucanian oxen, as being first seen in that part of Magna Grecia. Pompey exhibited him first in Italy; and he was often produced in games as low as Heliogabalus.

As all these were from Asia, it seems most probable they had but one horn; and they are represented as such in the medals of Domitian. Yet Martial * speaks of one with two horns; and the reality of the rhinoceros so armed being till now uncertain, commentators have taken pains to persuade us that this was an error of the poet; but there can be now no doubt that the poet was right, and the commentators wrong, a case that often happens.

I do not know from what authority the author of the Encyclopedia † refers to the medals of Domitian, where the rhinoceros, he says, has a double horn; in all those that have been published, one horn only is figured. The use made of these horns is in the turning loom; they are made into cups, and sold to ignorant people, as containing antidotes against poisons; for this quality they generally make part of the presents of the Mogul and kings of Persia at Constantinople. Some modern naturalists have scarce yet given over this prejudice; which might have had a possibility of truth while the Galenical school flourished, and vegetable poisons were chiefly used; but

record of Alexander's expedition into India, as Dr Shaw has pretended, sect. vii. p. 423.

* Martial. de Spectac.

† See Supplement to Chambers's Dictionary.

it is absurd to suppose, that what might discover solanum, or deadly night-shade, upon contact, would have the like effect upon the application of arsenic; and from experience I can pronounce, that a cup of this is alike useless in the discovery of either. The handles of daggers are always, in Abyssinia made of this horn; and those being the only works to which they are applied, is one of the reasons why I have said we should not rashly pronounce that the Asiatic rhinoceros has but one horn, merely because the foremost, or round horn, is the only one of the many that have been sent from India. In Abyssinia we seldom see the hunters at the pains to cut off or bring to market the second horn of the rhinoceros they have slain, because, being flat, in place of round, it has not diameter or substance enough to serve for the uses just spoken of; so that the round horn is the only one that appears either at Gondar or Cairo; and if we were to judge from this circumstance, the African rhinoceros is unicorn for the same reason as the Asiatic. The horns of this animal are hard and solid, of a reddish brown on the outside, a yellow inclining to gold within, and the heart a spot of black, which occupies the space of near two inches where the diameter of the horn is five. The surface takes a perfect polish, but when dried is very liable to splinter and crack. It likewise warps with heat, and scratches easily. And this was the reason that, though exceeding beautiful when new, it never would endure any time when made into the form of a snuff box, but warped and split with the heat of the pocket; though this I believe was chiefly owing to the lamina, or flat pieces into which it was cut, being always left too thin. The foremost of these horns crook inward at the point, but by no means with so sudden a curve as is represented by the Count de Buffon. How sensible the animal is in

this part, may be known from the accident I was eye-witness to in hunting him at Tcherkin, where a musket ball breaking off a point of that horn, gave him such a shock, as to deprive him for an instant of all appearance of life. Behind the foremost, or crooked horn, is the flat straight one, and again immediately behind that I have seen distinctly the rudiments of a third, and the horn full an inch long. If we may judge by its base, it would seem this third horn was intended to be as long as the other two.

The hunters of these large beasts are called Agageer, from Agara, to kill, by cutting the hams, or tendon of Achilles, with a sword. I have already described the manner of this hunting. These Agageers, the only people that have an opportunity of observing, if they would only tell what they observe truly, say, they frequently see rhinoceroses with three horns grown; that this last is round, but does not crook at the point, and is not quite so long as are the other two, not tapered so much as the foremost or crooked one; but this I leave entirely upon their veracity. I never did see the animal myself, nor three grown horns adhering to each other, as I have seen two. So if this is truth, here is a third species of this quadruped. They say the third horn is only upon the male, and does not grow till he is advanced in years; the double horn which I have is fixed to a strong muscle or cartilage; when dry, exceedingly tough. It comes down the *os frontis*, and along the bone of the nose; but not having observed accurately enough at the time the carcase was lying before me, I do not remember how this muscle terminated or was made fast, either at the occiput or on the nose. It has been imagined by several that the horn of the rhinoceros and the teeth of the elephant were arms which nature gave them against each other. That want of food, and vexation from be-

ing deprived of their natural habits, may make any two beasts of nearly equal strength fight or destroy each other, cannot be doubted; and accordingly we see that the Romans made these two animals fight at shows and public games: but this is not nature, but the artifice of man; there must be some better reason for this extraordinary construction of these two animals, as well as the different one of that of so many others. They have been placed in extensive woods and deserts, and there they hid themselves in the most inaccessible places; food in great plenty is round about them; they are not carnivorous, they are not rivals in love; what motive can they have for this constant premeditated desire of fighting?

I have said the rhinoceros does not eat hay or grass, but lives entirely upon trees; he does not spare the most thorny ones, but rather seems to be fond of them; and it is not a small branch that can escape his hunger. for he has the strongest jaws of any creature I know, and best adapted to grinding or bruising any thing that makes resistance. He has twenty-eight teeth in all, six of which are grinders, and I have seen short undigested pieces of wood, full three inches diameter, voided in his excrements; and the same thing of the elephant.

But besides these trees, capable of most resistance, there are in these vast forests within the rains, trees of a softer consistence, and of a very succulent quality, which seem to be destined for his principal food. For the purpose of gaining the highest branches of these, his upper lip is capable of being lengthened out so as to increase his power of laying hold with this in the same manner as the elephant does with his trunk. With this lip, and the assistance of his tongue, he pulls down the upper branches which have most leaves,

and these he devours first; having stript the tree of its branches, he does not therefore abandon it, but placing his snout as low in the trunk as he finds his horn will enter, he rips up the body of the tree, and reduces it to thin pieces, like so many laths; and when he has thus prepared it, he embraces as much of it as he can in his monstrous jaws, and twists it round with as much ease as an ox would do a root of celery, or any such pot-herb or garden-stuff.

Such, too, is the practice of the elephant. We saw, at every step in these immense forests, trees in different progresses of this operation, some divested of their leaves and branches, and cut over as far down the trunk as was soft, and pliable, and capable of being snapped off by one bite, without splitting or laceration; others, where the trunk was cut into laths or ribbands, some of which were eaten in part, others prepared, but which had been left from satiety or apprehension of danger, a feast without labour for the next that should find it. In some places we saw the trees all consumed, but a stump that remained about a foot from the ground, and these were of the most succulent kind, and there we distinctly perceived the beginning of the first laceration from the bottom; and what, beside the testimony of the hunters, confirmed this fact beyond doubt was, that in several places large pieces of the teeth of elephants, and horns of the rhinoceros, were brought to us, partly found lying on the ground at the foot of these trees, and part sticking in them.

Neither the elephant nor rhinoceros eat grass; if their food depended upon that, many times in the year they must be reduced to a state of starving; for the grass is naturally parched upon in some seasons, and at others burnt purposely by the Shangalla. It

is true, that in Europe their chief food is hay; trees cannot be every day spoiled for them in the quantity they would need. But this is not their natural food, more than the sugar and the aquavitæ that are given them here.

The roughness of the tongue of the rhinoceros is another matter in dispute: it is said to be so rough, that the animal with that can lick off the flesh of a man's bones. Others say, the tongue is so soft that it resembles that of a calf. Both of these are in some measure true, but aggravated by the reporters. The tongue of the young rhinoceros is soft, for the skin is much tougher and thicker too than that of a calf, and has apparently some furrows or wrinkles in it, but it has no prickles nor rudiments of any that are discernible, nor indeed has any use for them. On the other hand, the tongue and inside of the upper lip of the old rhinoceros are very rough; and this appears to me to arise from the constant use he makes of these parts in seizing the branches of trees which have rough barks, particularly the acacia. It is, when pursued, and in fear, that we see he possesses an astonishing degree of swiftness, considering his size, the apparent unwieldiness of his body, his great weight before, and the shortness of his legs. He is long, and has a kind of trot, which, after a few minutes, increases in a great proportion, and takes in a great distance; but this is to be understood with a degree of moderation. It is not true, that in a plain he beats the horse in swiftness. I have passed him with ease, and seen many worse mounted do the same; and though it is certainly true, that a horse can very seldom come up with him, this is owing to his cunning, but not his swiftness. He makes constantly from wood to wood, and forces himself into the thickest part of them. The trees that

are frush, or dry, are broke down, as with a cannon shot, and fall behind him and on his side in all directions. Others that are more pliable, greener, or fuller of sap, are bent back by his weight and velocity of his motion. And after he has passed, restoring themselves like a green branch to their natural position, they sweep the incautious pursuer and his horse from the ground, and dash them in pieces against the surrounding trees.

The eyes of the rhinoceros are very small; he seldom turns his head, and therefore sees nothing but what is before him. To this he owes his death; and never escapes, if there is so much plain as to enable the horse to get before him. His pride and fury, then, make him lay aside all thoughts of escaping but by victory over his enemy. He stands for a moment at bay, then, at a start, runs straight forward at the horse, like the wild boar, whom in his manner of action he very much resembles. The horse easily avoids him, by turning short aside, and this is the fatal instant: The naked man, with his sword, drops from behind the principal horseman, and unseen by the rhinoceros, who is seeking his enemy the horse, he gives him a stroke across the tendon of the heel, which renders him incapable of further flight or resistance.

In speaking of the great quantity of food necessary to support this enormous mass, we must likewise consider the vast quantity of water which he needs. No country but that of the Shangalla, which he possesses, deluged with six months rains, and full of large and deep basons, made in the living rock, and shaded by dark woods from evaporation; or watered by large and deep rivers, which never fall low, or to a state of dryness, can supply the vast draughts of this monstrous creature; but it is not for drinking alone that he frequents wet and marshy places; large, fierce, and

strong as he is, he must submit to prepare to defend himself against the weakest of all adversaries. The great consumption he constantly makes of food and water, necessarily confines him to certain limited spaces; for it is not every place that can maintain him. He cannot emigrate, or seek his defence among the sands of Atbara.

The fly, that unremitting persecutor of every animal that lives in the black earth, does not spare the rhinoceros, nor is afraid of his fierceness. He attacks him in the same manner as he does the camel, and would as easily subdue him, were it not for a stratagem practised by him for his preservation. The time of the fly being the rainy season, the whole black earth, as I have already observed, turns into mire. In the night, when the fly is at rest, he chooses a convenient place, and there rolling himself in the mud, he clothes himself with a kind of case, which defends him against his adversary the following day. The wrinkles and plaits of his skin serve to keep this muddy plaster firm upon him, all but about his hips, shoulders, and legs, where it cracks and falls off by motion, leaving him exposed in those places to the attacks of the fly. The itching and pain which follow occasion him to rub himself in those parts against the roughest trees, and this is at least one cause of the pustules or tubercles which we see upon these places, both on the elephant and rhinoceros. The Count de Buffon, who believes these pustules to be natural parts of the creature, says, in proof of this, that they have been found in the fœtus of a rhinoceros. I do not pretend to disbelieve this; it may be, that these punctures happening to the old female at the time she was with young, the impression of her sufferings might have appeared upon the young one. However this is, I cannot conceal that I have heard, not from

hunters only, but men worthy of credit, that this is the origin of these protuberances; and many rhinoceroses, slain in Abyssinia, are known to have been found at the season of the fly with their shoulders and buttocks bloody and excoriated. It is also by no means true, that the skin of the rhinoceros is hard or impenetrable like a board. I should rather suspect this to be disease, or from a different habit acquired by keeping; for in his wild state he is slain by javelins thrown from indifferent hands, which I have seen buried three feet in his body. A musket shot will go through him if it meets not with the intervention of a bone; and the Shangalla kill him by the worst and most inartificial arrows that ever were used by any people practising that weapon, and cut him to pieces afterwards with the very worst of knives.

I have said that, in the evening, he goes to welter in the mire. He enjoys the rubbing himself there so much, and groans and grunts so loud, that he is heard at a considerable distance. The pleasure that he receives from this enjoyment, and the darkness of the night, deprive him of his usual vigilance and attention. The hunters guided by his noise, steal secretly upon him, and, while lying on the ground, wound him with their javelins, mostly in the belly, where the wound is mortal.

A surgeon of the Shaftesbury Indiaman was the first who observed and mentioned a fact which has been rashly enough declared a fable*. He observed on a rhinoceros newly taken, after having weltered and coated itself in mud, as above mentioned, several in-

* Vid. Buffon Hist. rhinoceros, p. 235. Edwards, p. 25 and

sects, such as millepides, or scolopendræ, concealed, under the ply of the skin. With all submission to my friend's censure, I do not think he is in this so right or candid as he usually is; not having been out of his own country, at least in any country where he could have seen a rhinoceros newly taken from weltering in the mud, he could not possibly be a judge of this fact as the officer of the Shaftesbury was, who saw the animal in that state. Every one, I believe, have seen horses and cows drinking in foul water seized by leeches, which have bled them excessively, and swelled under the animal's tongue to a monstrous size. And I cannot say, with all submission to better judgment, that it is more contrary to the nature of things, that a leech should seize an animal, whose custom is to welter in water, than a fly bite and deposit her eggs in a camel in the sun-shine on land. But further I must bear this testimony, that, while at Ras el Feel, two of these animals were slain by the Ganjar hunters in the neighbourhood. I was not at the hunting, but, though ill of the flux, I went there on horseback before they had scraped off their muddy covering. Under the plies of one I saw two or three very large worms, not carnivorous ones, but the common large worm of the garden. I saw likewise several animals like earwigs, which I took for young scolopendræ, and two small, white, land-snail shells. I sought no further, but was told a number of different insects were found, and some of them that sucked the blood, which I take to be a kind of leech. There is then no sort of reason to accuse this gentleman of telling a falsehood, only because he was a better observer, and had better opportunities than others have had, and it is indeed neither just nor decent; on the contrary, it is a coarse manner of criticising, to tax a man with falsehood when he speaks as an

eye-witness, and has said nothing physically impossible.

The rhinoceros shewn at the fair of St Germain, that which the Count de Buffon and Mr Edwards saw, kept clean in a stable for several years, I believe had neither worms nor scolopendræ upon it, neither does this officer of the Shaftesbury report it had; but he says, that one covered with mud, in which it had been weltering, had upon it animals that are commonly found in that mud; and this neither Mr Parsons, nor Mr Edwards, nor the Count de Buffon, ever had an opportunity of verifying.

Chardin* says, that the Abyssinians tame and train the rhinoceros to labour. This is an absolute fable; for, besides that we have reason to believe the animal incapable of instruction, neither history nor tradition ever gave the smallest reason to make us believe this, nor is there any motive for attempting the experiment, more than for believing it ever was accomplished. Tractable as the elephant is, the Abyssinians never either tamed or instructed him. They never made use of beasts in war, nor would their country permit this training; so much the contrary, as we have already seen, that Ptolemy Philadelphus, and his successor Ptolemy Evergetes, did every thing in their power to persuade them to take the elephant alive, that they might tame them; but, as he was a principal part of their food, they never could succeed. And the latter prince, for this very purpose, made an expedition into Abyssinia, and was obliged to extirpate these hunters, and settle in their place a colony of his own at Arkeeko near Masuah which he called Ptolemais Theron for that very reason; after which, he

* Chardin, tom. iii. p. 45.

himself tells us in the long Greek inscription he left in the kingdom of Adel, that he had succeeded so far, by means of his colony of Greeks, as to train the Ethiopic elephant so as to make him superior to those in India; which he could never do by employing Abyssinians.

It is a general observation made in every part where this animal resides, that he is indocile, and wants talents; his fierceness may be conquered, and we see, with a moderate degree of attention, he is brought to be quiet enough; but it is one thing to tame or conquer his fierceness, and another to make him capable of instruction; and it seems apparently allowed to be his case, that he has not capacity. A steady, uniform fierceness in the brute creation, is to be subdued by care and by hunger; this is not the case with him, his violent transports of fury upon being hungry, or not being served in the instant with food, seems to bar this manner of taming him. His behaviour is not that of any other animal; his revenge and fury are directed as much against himself as against an enemy: he knocks his head against the wall, or the manger with a seeming intention to destroy himself, nay, he does destroy himself often. That sent from India to Emanuel king of Portugal, in the year 1513, and by him presented to the pope, was the cause the ship that carried him was sunk and lost; and the one that was shewn in France purposely drowned itself going to Italy.

The rhinoceros and the elephant are the principal food of the Shangalla. The manner of preparing the flesh I have already described, and shall not repeat. He is eaten too with great greediness by all the inhabitants of the low country, and Abara. The most de-

[1] Trans. Philosoph. No 471.

licate part about him is supposed to be the soles of his feet, which are soft like those of a camel, and of a gristly substance; the rest of the flesh seems to resemble that of the hog, but is much coarser. It smells of musk, and is otherwise very tasteless; I should think it would be more so to the negroes and hunters, who eat it without salt. The only hair about it is at the tip of its tail; they are there few and scattered, but thick as the lowest wire of a harpsichord; ten of these, fastened side by side, at the distance of half an inch from each other, in the figure of a man's hand, make a whip which will bring the blood at every stroke.

This rhinoceros was thirteen feet from the nose to its anus; and very little less than seven feet when he stood, measuring from the sole of his fore foot to the top of the shoulder. The first horn was fourteen inches. The second something less than thirteen inches. The flat part of the horn, where it was bare at its base and divested of hair, was four inches, and the top two inches and a half broad. In the middle it was an inch and a quarter thick; it was shaped like a knife; the back two inches, and, when turned, measured one fourth of an inch at the edge.

It seems now to be a point agreed upon by travellers and naturalists, that the famous animal, having one horn only upon his forehead, is the fanciful creation of poets and painters; to them I should willingly leave it; but a Swedish naturalist, Dr Sparman, who has lately published two volumes in quarto, in which he has distinguished himself by his low illiberal abuse of learned foreigners, as much as by the fulsome flattery he has bestowed on his own countrymen, has shewed an inclination to revive this antiquated fable. I do not, for my own part, believe the authority will be thought sufficient, or have many followers. The

publisher, by way of apology, as I suppose, for his rusticity and ill-manners, says, that he was employed in labour to earn a sufficient sum upon which to travel. What labour he applied to is not said; it was not a lucrative occupation surely, or the Doctor was not an able labourer, as the sum produced was but 38 dollars, and I really think his knowledge acquired seems to be pretty much in proportion to his funds.

Kolbe mentions what would seem a variety of the rhinoceros at the Cape. He says it has one horn upon its nose, and another upon its forehead. This the Count de Buffon thinks is untrue, and, from other circumstances of the narrative, supposes that Kolbe never saw this rhinoceros, and has described it only from hearsay. Though this, too, is Doctor Sparman's opinion, yet, unwilling to let slip an opportunity of contradicting the Count de Buffon, he taxes it as an improper criticism upon this rhinoceros of Kolbe: he says the description is a just one, and that a man of the Count's learning should have known that the forehead and nose of all animals were near each other. Although he has given a strange drawing of the skeleton of the head of a rhinoceros, where the nose and the forehead are very distinctly different, yet, in another drawing, he has figured his rhinoceros bicornis, with a head seemingly all nose, and much liker an ass than any thing we have seen pretended to be a rhinoceros since the time of Albert Durer. He pretends that, in his travels at the Cape, he saw an animal of this form, which had two horns upon his forehead, or his nose, whichever he pleases to call them. If such an animal does really exist, it is undoubtedly a new species; it has not the armour or plaited skin, seen in every rhinoceros till this time. He tells us a heap of wonderful stories about it, and

claims the honour of being the first discoverer of it; and really, I believe, he is so far in the right, that if he can prove what he says to be true, there is no man that will pretend to dispute this point with him. Besides its having a skin without plaits, it has two horns on the forehead, so loose that they clash against one another, and make a noise when the animal is running: then he has one of these only that are moveable, which he turns to one side or the other when he chooses to dig roots; an imagination scarcely possible, I think, to any one who has ever seen a rhinoceros. With these loose and clashing horns he diverts himself by throwing a man and horse into the air; and, though but five feet high, at other times he throws a loaded, covered waggon, drawn by two oxen, over hedges into the fields.

This rhinoceros very luckily is not carnivorous; and although he is among the swiftest of animals, and smells and scents people at a great distance, yet, with all these advantages, though his constant occupation, according to Dr Sparrman, seems to be hunting waggons and men also, he never was so successful as to kill but one man, as far as was ever known.

HYÆNA.

THERE are few animals, whose history has passed under the consideration of naturalists, that have given occasion to so much confusion and equivocation as the Hyæna. This began very early among the ancients, and the moderns have fully contributed their share. It is not my intention to take up the reader's time with discussing the errors of others, whether ancient or modern. Without displaying a great deal of learning to tell him what it is not, I shall content myself with informing him what it is, by a good figure and distinct relation of what in its history hath been unknown, or omitted, and put it in the reader's power to reject any of the pretended hyænas, that authors or travellers should endeavour to impose upon him. At the same time, I shall submit to his decision, whether the animal I mention is a new one, or only a variety of the old, as it must on all hands be allowed that he is as yet undescribed.

Most of the animals confounded with him are about six times smaller than he is, and some there are that do not even use their four legs, but only two. The want of a critical knowledge in the Arabic language, and of natural history at the same time, has in some measure been the occasion of this among the moderns. Bochart * discusses the several errors of the ancients with great judgment; and the Count de Buffon †, in

* Boch. vol. I. cap. xxxiii. † Buffon, vol. IX. 419.

a very elegant and pleasing manner, has nearly exhausted the whole.

I do not think there is any one that has hitherto written of this animal, who ever saw the thousandth part of them that I have. They were a plague in Abyssinia in every situation, both in the city and in the field, and I think surpassed the sheep in number. Gondar was full of them from the time it turned dark till the dawn of day, seeking the different pieces of slaughtered carcases which this cruel and unclean people expose in the streets without burial, and who firmly believe that these animals are Falasha from the neighbouring mountains, transformed by magic, and come down to eat human flesh in the dark in safety. Many a time in the night, when the king had kept me late in the palace, and it was not my duty to lie there, in going across the square from the king's house, not many hundred yards distant, I have been apprehensive they would bite me in the leg. They grunted in great numbers about me, though I was surrounded with several armed men, who seldom passed a night without wounding or slaughtering some of them.

One night in Maitsha, being very intent on observation, I heard something pass behind me towards the bed, but upon looking round could perceive nothing. Having finished what I was then about, I went out of my tent, resolving directly to return, which I immediately did, when I perceived large blue eyes glaring at me in the dark. I called upon my servant with a light; and there was the hyæna standing nigh the head of the bed, with two or three large bunches of candles in his mouth. To have fired at him, I was in danger of breaking my quadrant or other furniture; and he seemed, by keeping the candles steadily in his mouth, to wish for no other prey at that time. As his mouth was full, and he had no claws to tear with,

I was not afraid of him, but with a pike struck him as near the heart as I could judge. It was not till then he shewed any sign of fierceness; but, upon feeling his wound, he let drop the candles, and endeavoured to run up the shaft of the spear to arrive at me; so that, in self defence, I was obliged to draw out a pistol from my girdle and shoot him, and nearly at the same time my servant cleft his skull with a battle-axe. In a word, the hyæna was the plague of our lives, the terror of our night-walks, the destruction of our mules and asses, which above all others are his favourite food. Many instances of this the reader will meet with throughout my Travels.

The hyæna is known by two names in the East, Deeb and Dubbah. His proper name is Dubbah, and this is the name he goes by among the best Arabian naturalists. In Abyssinia, Nubia, and part of Arabia, he is, both in writing and conversation, called Deeb, or Deep, either ending with b or p; and here the confusion begins; for though Dubbah is properly a hyæna, Dabbu is a species of monkey; and though Deeb is likewise a hyæna, the same word signifies a jackal; and a jackal being by naturalists called a wolf, Deeb is understood to be a wolf also *. In Algiers this difference is preserved strictly; Dubbah is the hyæna; Deeb is the jackal, which run in flocks in the night, crying like hounds. Dubb is a bear, so here is another confusion, and the bear is taken for the hyæna, because Dubb, or Dubbah, seems to be the same word. So Poncet, on the frontiers of Sennaar, complains, that one of his mules was bit in the thigh by a bear, though it is well known there never was any animal of the bear-kind in that, or, I believe, in any other part of Africa. And I strongly apprehend, that the leopards and tigers, which Alvarez and Don Ro

* Deeb is the Hebrew Zii.—E.

derigo de Lima mention molested them so much in their journey to Shoa, were nothing else but hyænas. For tigers there are certainly none in Abyssinia; it is an Asiatic animal. Though there are leopards, yet they are but few in number, and are not gregarious; neither, indeed, are the hyænas, only as they gather in flocks, lured by the smell of their food: and of these it would seem there are many in Shoa, for the capital of that province, called Tegulat, means the city of the Hyæna.

If the description given by M. de Buffon is an elegant and good one, the draught of the animal is no less so. It is exactly the same creature I have seen on Mount Libanus and at Aleppo, which makes me have the less doubt that there are two species of this animal; the one partaking more of the dog, which is the animal I am now describing; the other more of the hog, which is the hyæna of M. de Buffon. Of this the reader will be easily satisfied, by comparing the two figures and the measures of them. The same distinction there is in the badger.

The animal from which this was drawn was slain at Tcawa, and was the largest I had ever seen, being five feet nine inches in length, measuring from his nose to his anus; whereas the hyæna exhibited by M. de Buffon was not half that, it being only three feet two inches nine lines in length. Notwithstanding the great superiority in size by which the hyæna of Atbara exceeded that of M. de Buffon, I did not think him remarkable for his fatness, or that he owed any of his size to his being at that time in more than ordinary keeping; on the contrary, I thought most of those I had before seen were in a better habit of body. As near as I could guess, he might weigh about eight stone, horseman's weight, that is, 14 pound to the stone, or 112 pound.

The length of his tail, from the longest hair in it to its insertion above the anus, was one foot nine inches. It was composed of strong hair of a reddish brown colour, without any rings or bands of blackness upon the points. In the same manner the mane consisted of hairs exactly similar both in colour and substance, being longer as they approached the neck, where they were about seven inches long; and though it was obvious that, upon being irritated, he could raise them upon his back, yet they were not rigid enough, and were too long to have the resistance of bristles of the hog or boar. This mane reached above two inches beyond the occiput between his ears, but then turned short, and ended there.

From the occiput to his nose he was one foot three inches and a half. The length of the nose, from the bottom of the forehead, was five inches and a half, in shape much like that of a dog; the whole head, indeed, more so than that of the wolf, or any other creature. The aperture of the eye was two inches nearly; that of the mouth, when not gaping or snarling, about four inches and a half. The ear, from its base to its extreme point, was nine inches and a quarter; it was mostly bare, or covered with very thin short hair. From the inside of one ear to that of the other, measured across the forehead, was seven inches and a half. From the edge of the opening of one eye to that of the other, measured in the same manner, it was three inches nearly. From the sole of the fore-foot, as it stood on the ground, to the top of the back above the shoulder, it was three feet seven inches; but his back was smooth and plain, not rising or curved as the hyæna of M. de Buffon appears to have been. The fore-leg was two feet in length, the foot flat, and four inches broad. From the sole of the foot to the middle of the fore-joint was six inches and

a half, and this joint seemed to be ill-made, and as it were crooked and half-bent. He has four toes, and a straight nail between each of them, greatly resembling that of a dog, strong and black, but by no means calculated for tearing animals, and as little for digging, by which occupation he is said chiefly to get his food.

He stands ill upon his hind-legs, nor can his measure there be marked with precision. It is observable in all hyænas, that when they are first dislodged from cover, or obliged to run, they limp so remarkably, that it would appear the hind leg was broken, and this has often deceived me; but, after they have continued to run some time, this affection goes entirely away, and they move very swiftly. To what this is owing it is impossible for me to say. I expected to have found something likely to be the origin of it in the dissection of this animal given by M. de Buffon; but no such thing appears, and I fear it is in vain to look for it elsewhere.

I apprehend from the sole of his hind foot to the joining of the thigh at his belly, was nearer two feet seven inches than any other measure. The belly is covered with hair very little softer and shorter than that of his back. It grows shorter as it approaches his hind-legs. His colour is of a yellowish brown, the head and ears the lightest part of him. The legs are marked thick with black bands, which begin at the lower hinder joint, then continue very dark in colour till the top of the thigh, where they turn broad and circular, reaching across the whole side. Over the shoulder are two semicircular bands likewise, then come very frequent bands down the outside of the fore-leg in the same manner as the hind. The inside of all his legs are without marks, so are the neck, head, and ears; but a little above the thorax is a large black streak which goes up along the throat, and

down to the point of the lower jaw. His nose is black, and above the point, for some inches, is of a dark colour also.

The hyæna is one of those animals which commentators have taken for the saphan, without any probability whatever, further than that he lives in caves, whither he retires in the summer to avoid being tormented with flies. Clement * of Alexandria introduces Moses saying, "You shall not eat the hare, nor the hyæna," as he interprets the word saphan: but the hyæna does not chew the cud; they are not, as I say, gregarious, though they troop together upon the smell of food. We have no reason to attribute extraordinary wisdom to him; he is, on the contrary, brutish, indolent, slovenly, and impudent, and seems to possess much the manners of the wolf. His courage appears to proceed from an insatiable appetite, and has nothing of the brave or generous in it, and he dies oftener flying than fighting; but least of all can it be said of him that he is a *feeble folk*, being one of the strongest beasts of the field.

Upon the most attentive consideration, the animal here represented seems to be of a different species from the hyæna of M. de Buffon. This of Atbara seems to be a dog, whereas the first sight of the hyæna of M. de Buffon gives the idea of a hog, and this is the impression it seems to have made upon the first travellers that describe him. Kempfer † calls him Taxus Porcinus, and says he has bristles like a hog.

We have an example of variety of this sort in the badger. There is a sow of that kind, and a dog. The dog is carnivorous, and the sow lives upon vegetables,

* Clem. Alexan. lib. ii. Pædago. cap. 10.
† Kemp. p. 411. and 412.

though both of them have been suspected at times to eat and devour animal food.

The hyæna about Mount Libanus, Syria, the north of Asia, and also about Algiers, is known to live for the most part upon large succulent bulbous roots, especially those of the fritillaria, and such large, fleshy, vegetable substances. I have known large spaces of fields turned up to get at onions or roots of those plants; and these were chosen with such care, that, after having been peeled, they have been refused and left on the ground for a small rotten spot being discovered in them. It will be observed, the hyæna has no claws either for seizing or separating animal food, that he might feed upon it; and I therefore imagine his primitive manner of living was rather upon vegetables than upon flesh, as it is certain he still continues his liking to the former; and I apprehend it is from an opportunity offering in a hungry time that he has ventured either upon man or beast: for few carnivorous animals, such as lions, tigers, and wolves, ever feed upon both.

As to the charge against him of his disturbing sepulchres, I fancy it is rather supposed from his being unable to seize his living prey that he is thought to attach himself to the dead. Upon much inquiry I never found one example fairly proved. The graves in the east are built over with mason-work; and though it is against the law of the Turks to repair these when they fall down, yet the body is probably consumed long before that happens: nor is the hyæna provided with arms or weapons to attempt it in its entire state; and the large plants and flowers, with fleshy bulbous roots, are found generally in plenty among the graves.

But the hyæna of Abara seems long to have abandoned his primitive food of roots, if that was ever his, and to have gone largely and undeniably into the

slaughter of living creatures, especially that of men. Indeed, happily for himself, he has adopted this succedaneum; for as to roots or fruit of any kind, they are not to be found in the desert country where he has chosen his domicil; and he has no difficulty from the sepulchres, because whole nations perish without one man of them being buried. Add to this, that the depravity of human nature, the anarchy and bad government of the country, have given him greater opportunities than anywhere else in the world to obtain frequent and easy victories over man.

It is a constant observation in Numidia, that the lion avoids and flies from the face of man, till by some accident they have been brought to engage, and the beast has prevailed against him; then that feeling of superiority, imprinted by the Creator in the heart of all animals for man's preservation, seems to forsake him. The lion, having once tasted human blood, relinquishes the pursuit after the flock. He repairs to some high way or frequented path, and has been known, in the kingdom of Tunis, to interrupt the road to a market for several weeks; and in this he persists till hunters or soldiers are sent out to destroy him.

The same, but in a much greater extent, happens in Atbara. The Arabs, the inhabitants of that country, live in encamprients in different parts of the country, their ancient patrimony or conquest. Here they plow and sow, dig wells, and have plenty of water; the ground produces large crops, and all is prosperity as long as there is peace. Insolence and presumption follow ease and riches. A quarrel happens with a neighbouring clan, and the first act of hostility, or decisive advantage, is the one burning the other's crop at the time when it is near being reaped. Inevitable famine follows; they are provided with no stores, no stock on hand, their houses are burnt, their wells fill-

ed up, the men slain by their enemies, and many thousands of the helpless remainder left perfectly destitute of necessaries; and that very spot, once a scene of plenty, in a few days is reduced to an absolute desert. Most of the miserable survivors die before they can reach the next water; they have no subsistence by the way, they wander among the acacia-trees, and gather gum. There every day losing their strength, and destitute of all hope, they fall spontaneously, as it were, into the jaws of the merciless hyæna, who, finding so very little difference or difficulty between slaying the living and devouring the dead, follows the miserable remains of this unfortunate multitude, till he has extirpated the last individual of them. Thence it comes that we find it remarked in my return through the desert, that the whole country is strewed with bones of the dead; horrid monuments of the victories of this savage animal, and of man, more savage and cruel than he. From the ease with which he overcomes these half-starved and unarmed people, arises the calm, steady confidence in which he surpasses all the rest of his kind.

In Barbary I have seen the Moors in the day-time take this animal by the ears, and pull him towards them, without his attempting any other resistance than that of his drawing back: and the hunters, when his cave is large enough to give them admittance, take a torch in their hand, and go straight to him: when, pretending to fascinate him by a senseless jargon of words which they repeat, they throw a blanket over him, and haul him out. He seems to be stupid or senseless in the day, or at the appearance of strong light, unless when pursued by the hunters.

I have locked up a goat, a kid, and a lamb, with him all day when he was fasting, and found them in the evening alive and unhurt. Repeating the expe-

riment one night he ate up a young ass, a goat, and a fox, all before morning, so as to leave nothing but some small fragments of the ass's bones.

In Barbary, then, he has no courage by day; he flies from man, and hides himself from him: But in Abyssinia or Atbara, accustomed to man's flesh, he walks boldly in the day-time like a horse or mule, attacks man wherever he finds him, whether armed or unarmed, always attaching himself to the mule or ass in preference to the rider. I may safely say, I speak within bounds, that I have fought him above fifty times hand to hand, with a lance or spear, when I had fallen unexpectedly upon him among the tents, or in defence of my servants or beasts. Abroad, and at a distance, the gun prevented his nearer approach; but in the night, evening, or morning, we were constantly in close engagement with him.

This frequent victory over man, and his daily feeding upon him without resistance, is that from which he surely draws his courage. Whether to this food it is that he owes his superior size, I will not pronounce. For my own part, I consider him as a variety of the same, rather than another species. At the same time I must say, his form gave me distinctly the idea of a dog, without one feature or likeness of the hog, as was the case with the Syrian hyæna living on Mount Libanus, which is that of M. de Buffon, as plainly appears by his drawing.

I have oftentimes hinted, in the course of my travels at the liking he has for mules and asses; but there is another passion for which he is still more remarkable, that is, his liking to dog's flesh, or, as it is commonly expressed, his aversion to dogs. No dog, however fierce, will touch him in the field. My greyhounds, accustomed to fasten upon the wild boar, would not venture to engage with him. On the con-

trary, there was not a journey I made that he did not kill several of my greyhounds, and once or twice robbed me of my whole stock: he would seek and seize them in the servants' tents where they were tied, and endeavour to carry them away before the very people that were guarding them.

This animosity between him and dogs, though it has escaped modern naturalists, appears to have been known to the ancients in the East. In Ecclesiasticus (chap. xiii. ver. 18.) it is said, "What agreement is there between the hyæna and the dog?" a sufficient proof that the antipathy was so well known as to be proverbial.

And I must here observe, that if there is any precision in the definition of Linnæus, this animal does not answer to it, either in the cauda recta or annulata; for he never carries his tail erect, but always close behind him like a dog when afraid, or unless when he is in full speed; nor is the figure given by M. de Buffon marked like the hyæna of Atbara, though, as I have said, perfectly resembling that of Syria; and the figure I have here given has, I believe, scarcely a hair misplaced in it. Upon the whole, I submit this entirely to my reader, being satisfied with having, I hope, fully proved what was the intent of this dissertation, that the saphan is not the hyæna, as Greek commentators upon the Scripture have imagined.

JERBOA.

I HAVE already observed, that the Arabs have confounded the Saphan with several other animals that have no sort of resemblance to it: there are two of these very remarkable, the Fennec and Jerboa, of which I am now to treat. As I have given excellent figures of both, by drawings taken from the creatures alive, I have no doubt I shall prevent any confusion for the future, and throw some light upon sacred Scripture, the greatest profit and use that can result from this sort of writing.

If the rabbit has been frequently confounded with the saphan, and stood for it in the interpretation of the Hebrew text, the same has likewise happened to another animal, the Jerboa, still more dissimilar in form and in manners from the saphan, than even the rabbit itself, and much less known. The Jerboa is a small harmless animal of the desert, nearly the size of a common rat: the skin very smooth and shining, of a brown tinged with yellow or gold colour, and the ends of the hairs tipt with black. It lives in the smoothest plains or places of the desert, especially where the soil is fixed gravel; for in that chiefly it burrows, dividing its hole below into many mansions. It seems to be apprehensive of the falling in of the ground; it therefore generally digs its hole under the root of some spurge, thyme, or absinthium, upon whose root it seems to depend for its root not falling in, and burying it in the ruins of its subterraneous habitation. It seems to delight most in those places that are haunted by the cerastes, or horned viper. Nature has certain-

ly imposed this dangerous neighbourhood upon the one for the good and advantage of the other, and that of mankind in general. Of the many trials I made, I never found a Jerboa in the body of a viper, excepting once in that of a female big with young, and the Jerboa itself was then nearly consumed.

The Jerboa, for the most part, stands upon his hind legs; he rests himself by sitting backwards sometimes, and I have seen him, though rarely, as it were lie upon all four; whether that is from fatigue or sickness, or whether it is a natural posture, I know not. The Jerboa of the Cyrenaicum is six inches and a quarter in length, as he stands in the drawing. He would be full half an inch more if he was laid straight at his length immediately after death. The head, from his nose to the occiput, is one inch two lines. From the nose to the foremost angle of the eye, six lines. The opening of the eye itself is two lines and a quarter; his ears three quarters of an inch in length, and a quarter of an inch in breadth; they are smooth, and have no hair within, and but very little without; of an equal breadth from bottom to top, do not diminish to a point, but are rounded there. The buttocks are marked with a semicircle of black, which parts from the root of the tail, and ends at the top of the thigh. This gives it the air of a compound animal, a rat with bird's legs, to which the flying posture still adds resemblance. From this stroke to the centre of the eye is three inches, and to the point of his toe the same measure; his tail is six inches and a quarter long, seems awkwardly set on, as stuck between his buttocks, without any connection with his spine; half of it is poorly covered with hair of a light or whiter colour than his body; the other half is a beautiful feather of long hair, the middle white, the edges jet black: this tail, which by its length would seem an incumbrance

to him, is of a surprising advantage in guiding and directing him in his jumping.

From the shoulder to the elbow of the fore foot is half an inch; from the elbow to the joining of the paw, five-eighths of an inch. The claw itself is curved, and is something less than a quarter of an inch. It has very long mustachoes, some of them standing backward, and some of them forward from his nose; they are all of unequal lengths, the longest an inch and a half; his belly is white: he seems to be of a very cleanly nature, his hair always in great order. From his snout to the back part of the opening of the mouth is half an inch; his nose projects beyond his under jaw three quarters of an inch. He has four toes in his hind-foot, and a small one behind his heel, where is a tuft of hair coloured black. The fore-foot hath three toes only.

The ancients have early described this animal; we see him in some of the first medals of the Cyrenaicum, sitting under an umbellated plant, supposed to be the silphium, whose figure is preserved to us on the silver medals of Cyrene. The high price set upon it is mentioned by several historians; but the reason of that value, or the use of the plant, I have never yet been able to comprehend. I suppose it was an adventitious plant, which the curiosity and correspondence of the princes of that state had probably brought from some part of Negroland, where the goats are browsing upon it at this day with indifference enough, unconscious of the price it bore in the time of the Ptolemies.

Herodotus *, Theophrastus †, and Aristotle ‡, all

* Herod. Melp. sect. 192.
† Theoph. apud Ælian. Hist. Anim. lib. xv. cap. 26.
‡ Arist. de Mirab. Egypt. lib. vi.

mention this animal under the name of δίπες γαλαι δίποδες, or, two-footed rats. This animal is found in most of the parts of Arabia and Syria, in every part of the southern deserts of Africa, but no where so frequently, and in such numbers, as in the Cyrenaicum, or Pentapolis. In my unfortunate journey there, I employed the Arabs, together with my servants, to kill a number with sticks, so as that the skins might not be injured by shot. I got them dressed in Syria and in Greece, and sewed together, making use of the tail as in ermine for the lining of a cloak; and they had a very good effect; the longer they wore, the glossier and finer appearance the skins made. The Jerboa is very fat and well coloured; the buttocks, thighs, and part of the back, are roasted and eaten by the Arabs. I have eaten them; they are not distinguishable from a young rabbit either in colour or taste; they have not even the strong taste the rabbit has. Some writers have confounded these two animals together; at least they have mistaken this for the saphan, and the saphan for the rabbit. This, however, is plainly without foundation. These long legs, and the necessity of leaping, demand the plain ground, where Nature has always placed this creature.

The Arabs Ibn Bitar, Algiahid, Alcamus, and Damir, and many others, have known the animal perfectly, though some of them seem to confound it with another called the Ashkoko. Ibnalgiauzi says, that the Jerboa is the only kind that builds in rocks, which from ten thousand examples I am sure he does not, nor is he any way made for it; and I am very certain he is not gregarious. They have a number of holes, indeed, in the same place; but I do not remember ever to have seen more than two together at a time. The Arab Canonists are divided whether or not he can be lawfully eaten. Ibnalgiauzi is of opinion he cannot,

nor any other animal living under the ground, excepting the land crocodile, which he calls El Dabb, a large lizard, said to be useful in venerial pursuits. Ata and Achmet Benhantal, and several others, expressly say, that the eating of the Jerboa is lawful. But this seems to be an indulgence; as we read in Damir, that the use of this animal is granted because the Arabs delight in it. And Ibn Bitar says, that the Jerboa is called Israelitish, that the flesh of it is dried in the outward air, is very nourishing, and prevents costiveness; from which we should apprehend, that medicinal considerations entered into this permission likewise. However this may be, it seems to me plain, such was not the opinion of the old translators of the Arab version from the Hebrew; they once only name this animal expressly, and there they say it is forbidden. The passage is in Isaiah, "They that sanctify themselves, and purify themselves in the gardens behind one tree in the midst, eating swine's flesh, and the abomination, and the mouse, shall be consumed together, saith the Lord*." The Hebrew word signifies mouse; and so our English translation renders it: But the Arabic version calls it expressly the Jerboa, and classes it with the abomination and swine's flesh, that is, in the class of things in the highest degree forbidden.

There is little variety in this animal, either in size or colour, in the wide range that it inhabits. Towards Aleppo they have broader noses than the African ones; their bodies also thicker, and their colour lighter: a thing we always see in the Syrian animals, compared to the African. The first of these I saw was in London, in the hands of Dr Russel, who has wrote the history of Aleppo, of whom I have before

* Isaiah, chap. lxvi. ver. 17.

made mention. Haym published an account of the Jerboa; so does Dr Shaw; but there exists not, that I know, one good figure of him, or particular description.

The figure given us by Edwards is thick and short, out of all proportion. His legs are too short, his feet too large, he wants the black mark upon his heel, the nails of his fore-feet are greatly too long; and there is certainly a latitude taken in the description, when his head is said very much to resemble that of a rabbit. Dr Hasselquist has given us a kind of description of him without a figure. He says the Arabs call him Garbuka; but this is not so, he goes by no other name in all the east but that of Jerboa; only the letter J, sometimes being pronounced Y, for Jerboa he is called Yerboa; and this is the only variation in name.

The Arabs of the kingdom of Tripoli make very good diversion with the Jerboa, in training their greyhounds, which they employ to hunt the gazel, or antelope, after instructing him to turn nimbly by hunting this animal. The prince of Tunis*, son of Sidi Younis, and grandson of Ali Bey, who had been strangled by the Algerines when that capital was taken, being then in exile at Algiers, made me a present of a small grey hound, which often gave us excellent sport. It may be perhaps imagined, a chace between these two creatures could not be long; yet I have often seen, in a large inclosure, or court-yard, the greyhound employ a quarter of an hour before he could master his nimble adversary: the small size of the creature assisted him much; and had not the greyhound been a practised one, and made use of his feet,

* Tunis.

as well as his teeth, he might have killed two antelopes in the time he could have killed one Jerboa.

It is the character of the saphan given in Scripture, that he is gregarious; that he lives in houses made in the rock; that he is distinguished for his feebleness, which he supplies by his wisdom: None of these characteristics agree with the Jerboa; and, therefore, though he chews the cud in common with some others, and was in great plenty in Judea, so as to be known by Solomon, yet he cannot be the saphan of the Scripture.

FENNEC.

This beautiful animal, which has lately so much excited the curiosity, and exercised the pens rather than the judgment of some naturalists, was brought to me at Algiers by Mahomet Rais, my drugoman, or janizary, while consul-general to his Majesty in that regency.

Mahomet Rais bought it for two sequins from an acquaintance, a Turkish oldash, or foot-soldier, just then returned from Biscara, a southern district of Mauritania Cæsariensis, now called the Province of Constantina. The soldier said they were not uncommon in Biscara, but more frequently met with in the neighbouring date territories of Beni Mezzab and Werglah, the ancient habitations of the Melano-Gætuli; in the

last mentioned of which places, they hunted them for their skins, which they sent by the caravan to sell at Mecca, and whence they were after exported to India. He said that he had endeavoured to bring three of them, two of which had escaped, by gnawing holes in the cage. I kept this for several months at my country-house near Algiers, that I might learn its manners. I made several drawings of it, particularly one in water-colours, of its natural size, which has been the original of all those bad copies that have since appeared. Having satisfied myself of all particulars concerning it, and being about to leave Algiers, I made a present of him to Captain Cleveland, of his Majesty's ship Phœnix, then in that port, and he gave him to Mr Brander, Swedish consul in Algiers. A young man, Balugani, of whom I have already spoken, then in my service, in which, indeed, he died, allowed himself so far to be surprised, as, unknown to me, to trace upon oiled paper a copy of this drawing in water-colours, just now mentioned. This he did so servilely, that it could not be mistaken, and was therefore, as often as it appeared, known to be a copy by people* the least qualified to judge in these matters. The affectation of the posture in which it was sitting, the extraordinary breadth of its feet, the unnatural curve of the tail, to shew the black part of it, the affected manner of disposing its ears, were all purposely done, to shew particular details that I was to describe, after the animal itself should be lost, or its figure, through length of time, should be less fresh in my memory.

Dr Sparman, with his natural dulness, and a disingenuousness, which seems partly natural, partly acquired, and improved by constant plagiarisms from

* Sparman, vol. ii. p. 186.

the works of others, pretends, in favour of his country and countrymen, to steal this into a Swedish discovery. He says that Mr Brander has published an account of it in some Swedish Transactions; a book I never saw; but that, being long importuned by his friend Mr Nicander, to give the figure of the animal itself to be published, he constantly refused it.

Whether this fact be so or not, I do not pretend to give my opinion: if it be, I cannot but think Mr Brander's conduct, in both cases, extremely proper. The creature itself passed by very fair means, from my possession into Mr Brander's, who cannot doubt that I would have given it to him in preference to Mr Cleveland, if I had known he thought it of the least consequence; he was then, as having had the animal by just means in his possession, as much entitled to describe him as I was; or as the Turk, the prior possessor, who gave him to me, had he been capable, and so inclined. On the other hand, Mr Brander likewise judged very properly in refusing to publish the drawing at the request of Mr Nicander. The drawing was not justly acquired, as it was obtained by a breach of faith, and seduction of a servant, which might have cost him his bread. It was conducted with a privacy seldom thought necessary to fair dealing; nor was it ever known to me, till the young man began to be dangerously sick at Tunis, when he declared it voluntarily to me, with a contrition that might have atoned for a much greater breach of duty.

Dr Sparman attempts to conceal these circumstances. He says Mr Brander told him, that I saw this animal at Algiers, and that I employed the same painter that he did to make the drawing of him; and speaks of a painter found at Algiers as readily as if he had been at the gates of Rome or Naples. These are the wretched subterfuges of low minds, as distant from

science as they are from honour and virtue. Why, if the animal was equally known to Mr Brander and me, did he not, when writing upon it, give his name, his manners, the uses to which he was destined, and the places where he resided? Why send to Algiers for an account of him, after having him so long in his possession, since at Algiers he was probably as great a stranger as he was at Stockholm? Why call him a fox, or pronounce his genus, yet write to Algiers for particulars to decide what that genus was?

The Count de Buffon *, content with the merit of his own works, without seeking praise from scraps of information, picked up at random from the reports of others, declares candidly, that he believes this animal as yet anonyme; and in this, as in other respects, to be perfectly unknown. If those that have written concerning it had stopt here likewise, perhaps the loss the public would have suffered, by wanting their observations, would not have been accounted a great detriment to natural history.

Mr Pennant †, from Mr Brander's calling him a fox, has taken occasion to declare that his genus is a dog. Mr Sparman attacks the description which I gave of this animal, in a conversation with the Count de Buffon at Paris. He declares I am mistaken by saying that it lives on trees ‡; for, in consequence, I suppose, of its being a fox, he says it burrows in the ground, which, I doubt very much, he never saw an African fox do. His reason for this is, that there is a small animal which lives in the sands at Camdebo, near the Cape of Good Hope, which is rose coloured, and he

* Supplement to Tom. iii. p. 148.
† Vol. I. p. 248.
‡ Sparman's Voyage to the Cape, vol. ii. p. 180.

believes it to be the animal in question; for he once hunted it, till it escaped by burrowing under ground; but he did not remark or distinguish his ears *.

I do really believe there may be many small animals found at Camdebo, as well as in all the other sands of Africa; but having seen the rest of this creature during the whole time of a chace, without remarking his ears, which are his great characteristic, is a proof, that Dr Sparman is either mistaken in the beast itself, or else he is an unfortunate and inaccurate observer. There is but one other animal that has ears more conspicuous, or disproportioned, than this we are now speaking of. I need not name him to a man of the professor's learning. The doctor goes on in a further description of this animal, that he had never seen. He says his name is Zerda, which, I suppose, is the Swedish translation of the Arabic word Jerd, or Jerda. But here Dr Sparman has been again unlucky in his choice; for, besides many other differences, the Jerd, which is an animal well known both in Africa and Arabia, has no tail; but this, perhaps, is but another instance of the doctor's ill fortune: In the first case, he overlooked this animal's ears; in the second, he did not perceive that he had a tail.

The Arabs who conquered Egypt, and soon after the rest of Africa, the tyranny and fanatical ignorance of the Khalifat of Omar being overpast, became all at once excellent observers. They addicted themselves, with wonderful application, to all sorts of science; they became very skilful physicians, astronomers, and mathematicians; they applied in a particular manner, and with great success, to natural history; and being much better acquainted with their country than we

* Page 185.

are, they were, in an especial manner, curious in the accounts of its productions. They paid great attention, in particular, to the animals whose figures and parts are described in the many books they have left us: as also their properties, manners, their uses in medicine and commerce, are set down as distinctly and plainly as words alone could do. Their religion forebade them the use of drawing; this is the source of the confusion that has happened, and this is the only advantage we have over them.

I believe there are very few remarkable animals, either in Africa or Arabia, that are not still to be found described in some Arabian author; and it is doing the public little service, when, from vanity, we substitute crude imaginations of our own in place of the observations of men, who were natives of the country, in perpetual use of seeing, as living with the animals which they described. There cannot, I think, be a stronger instance of this, than in the subject now before us; notwithstanding what has been as confidently as ignorantly asserted, I will venture to affirm, that this animal, so far from being unknown, is particularly described in all the Arabian books: neither is he without a name; he has one by which he invariably passes in every part of Africa where he exists, which, in all probability, he has enjoyed as long as the lion or the tiger have theirs. He is white, and not rose-coloured *; he does not burrow in the earth, but lives upon trees; he is not the Jerda, but has a tail; and his genus is not a dog, for he is no fox. Here is a troop of errors on one subject, that would give any man a surfeit of modern description, all arising from conceit, the *cacoethes scribendi*, too great love of wri-

* Sparrman, vol. ii. p. 185.

ting, without having been at the pains to gain a sufficient knowledge of the subject by fair inquiry, and a very little reading.

The name of this quadruped all over Africa is El Fennec; such was the name of that I first saw at Algiers; such it is called in the many Arabian books that have described it. But this name, having no obvious signification in Arabic, its derivation has given rise to many ill-founded guesses, and laid it open to the conjectures of grammarians who were not naturalists. Golius says it is a weasel, and so say all the Arabians. He calls it *mustela fœnaria*, the hay-weasel, from fœnum, hay, that being the materials of which he builds his nest. But this derivation cannot be admitted; for there is no such thing known as hay in the country where the Fennec resides. But supposing that the dry grass in all countries may be called hay, still fœnum, a Latin word, would not be that which would express it in Africa. But when we consider, that long before, and ever after Alexander's conquest, down as low as the tenth century, the language of these countries behind Egypt was chiefly Greek, an etymology much more natural and characteristic will present itself in the word φοινιξ, a palm tree, whence comes phœnicus, adjective, of, or belonging to, the palm or date tree.

Gabriel Sionita * says, the Fennec is a white weasel, that lives in Sylvis Nigrorum, that is, in the woods of the Melano Gætuli, where, indeed, no other tree grows but the palm-tree; and this just lands us in the place from which the Fennec was brought to me at Algiers, in Biscara, Beni Mezzab, and Werglah. It will be observed, that he does not say it is an animal

* Clem. 1. part I.

of Nigritia; for that country being within the tropical rains, many other trees grow besides the palm, and there the date does not ripen; and by its very thin hair, and fine skin, this creature is known at first sight to belong to a dry warm climate. But to leave no sort of doubt, he calls him Getulicus, which shews precisely what country he means. There, in the high palm trees, of which this country is full, he writes, the Fennec builds its nest, and brings up its young. Giggeius tells us, that their skins are made use of for fine pelisses; Ibn Beitar, that quantities of this fur is brought from the interior parts of Africa; and Damir and Razi say, that their skins are used for pelisses in summer *.

After leaving Algiers, I met with another Fennec at Tunis; it had come last from the island of Gerba †, and had been brought there by the caravan of Gademis, or Fezzan. I bought one at Sennaar; whence it came I know not. I kept it a considerable time in a cage, till finding it was no longer safe for me to stay at Sennaar, I trusted it, by way of deposit, in the hands of a man, whom it was necessary to deceive with the expectation that I was to return, and only going for a few days to the camp of Shekh Adelan. It was known by Mahomet Towash, and several people at Sennaar, to be frequently carried to Cairo, and to Mecca, with paroquets, and those curiosities which are brought by the great caravan from the Niger, which traverses the dreary desart of Selima, and takes the date villages in its way eastward.

All these animals, found at separate times, did exactly resemble the first one seen at Algiers. They

* Vid. Epist. J. Cai, Anglı ad Gesnerum.
† Memor. Ins.

were all known by the name of Fennec, and no other, and said to inhabit the date villages, where they built their nests upon trees perfectly conformable to what the Arabian authors, whether naturalists or historians, had said of them.

Though his favourite food seemed to be dates, or any sweet fruit, yet I observed he was very fond of eggs: Pigeons eggs, and small birds eggs, were first brought him, which he devoured with great avidity; but he did not seem to know how to manage the egg of a hen; but when broke for him, he ate it with the same voracity as the others. When he was hungry, he would eat bread, especially with honey or sugar. It was very observable, that a bird, whether confined in a cage near him, or flying across the room, engrossed his whole attention. He followed it with his eyes wherever it went, nor was he at this time to be diverted by placing biscuit before him; and it was obvious, by the great interest he seemed to take in its motions, that he was accustomed to watch for victories over it, either for his pleasure or his food. He seemed very much alarmed at the approach of a cat, and endeavoured to hide himself, but shewed no symptom of preparing for any defence. I never heard he had any voice; he suffered himself, not without some difficulty, to be handled in the day, when he seemed rather inclined to sleep, but was exceedingly unquiet and restless as soon as night came, and always endeavouring his escape; and though he did not attempt the wire, yet with his sharp teeth, he very soon mastered the wood of any common bird cage.

From the snout to the anus he was about ten inches long; his tail five inches and a quarter, near an inch on the tip of it was black. From the point of his fore-shoulder to the point of his fore-toe, was two inches and seven-eighths. He was two inches and a half from his

occiput to the point of his nose; the length of his ears three inches and three eighths. These were doubled, or had a plait on the bottom on the outside; the border of his ears in the inside were thick-covered with soft white hair, but the middle part was bare, and of a pink or rose colour. They were about an inch and a half broad, and the cavities within very large. It was very difficult to measure these; for he was very impatient at having his ears touched, and always kept them erect, unless when terrified by a cat. The pupil of his eye was large and black, surrounded by a deep blue iris. He had strong thick mustachoes; the tip of his nose very sharp, black, and polished. His upper jaw reached beyond the lower, and had four grinders on each side of the mouth. It has six fore-teeth in each jaw. Those in the under-jaw are smaller than the upper. The canine, or cutting teeth, are long, large, and exceedingly pointed. His legs are small, and his feet very broad; he has four toes, armed with crooked, black, sharp claws; those on his fore-feet more crooked and sharp than behind. All his body is nearly of a dirty white, bordering on cream colour; the hair of his belly rather whiter, softer, and longer than the rest, and on it a number of paps; but he was so impatient, it was impossible to count them. He very seldom extended or stiffened his tail, the hair of which was harder. He had a very sly and wily appearance. But as he is a solitary animal, and not gregarious; as he has no particular mark of feebleness about him, no shift or particular cunning which might occasion Solomon to qualify him as wise; as he builds his nest upon trees, and not on the rock, he cannot be the saphan of the Scripture, as some, both Jews and Arabians, not sufficiently attentive to the qualities attributed to that animal, have nevertheless erroneously imagined.

ASHKOKO.

This curious animal is found in Ethiopia, in the caverns of the rocks, or under the great stones in the Mountain of the Sun, behind the queen's palace at Koscam. It is also frequent in the deep caverns in the rocks in many other places in Abyssinia. It does not burrow, or make holes, as the rat and rabbit; nature having interdicted him this practice, by furnishing him with feet, the toes of which are perfectly round, and of a soft, pulpy, tender substance; the fleshy parts of the toes project beyond the nails, which are rather broad than sharp, much similar to a man's nails ill grown; and these appear to be given him rather for the defence of his soft toes, than for any active use in digging, to which they are by no means adapted.

His hind-foot is long and narrow, divided with two deep wrinkles, or clefts, in the middle, drawn across the centre, on each side of which the flesh rises with considerable protuberancy, and it is terminated by three claws, the middle one is the longest. The fore-foot has four toes, three disposed in the same proportion as the hind-foot; the fourth, the largest of the whole, is placed lower down on the side of the foot, so that the top of it arrives no farther than the bottom of the toe next to it. The sole of the foot is divided in the centre by deep clefts, like the other, and this cleft reaches down to the heel, which it nearly divides. The whole of the fore-foot is very thick, fleshy, and soft, and of a deep black colour, altogether void of hair; though the back, or upper part of it, is thick covered like the rest of its body, down to where the

toes divide, and the hair ends; so that these long round toes very much resemble the fingers of a man.

In place of holes, it seems to delight in less close, or more airy places, in the mouths of caves, or clefts in the rock, or where one projecting, and being open before, affords a long retreat under it, without fear that this can ever be removed by the strength or operations of man. The Askoko is gregarious, and frequently several dozens of them sit upon the great stones at the mouth of caves, and warm themselves in the sun, or even come out, and enjoy the freshness of the summer evening. They do not stand upright upon their feet, but seem to steal along as in fear, their belly being nearly close to the ground, advancing a few steps at a time, and then pausing. They have something very mild, feeble-like, and timid in their deportment; are gentle, and easily tamed, though, when roughly handled at first, they bite very severely.

This animal is found plentifully on Mount Libanus. I have seen him also among the rocks at the Pharan Promontorium, or Cape Mahomet, which divides the Elanitic from the Heroopolitic Gulf, or Gulf of Suez. In all places they seem to be the same; if there is any difference, it is in favour of the size and fatness, which those in the Mountain of the Sun seem to enjoy above the others. What is his food I cannot determine with any degree of certainty. When in my possession, he ate bread and milk, and seemed rather to be a moderate than voracious feeder. I suppose he lives upon grain, fruit, and roots. He seemed too timid and backward in his own nature to feed upon living food, or catch it by hunting.

The total length of this animal as he sits, from the point of his nose to his anus, is 17 inches and a quarter. The length of his snout, from the extremity of

the nose to the occiput, is three inches and three-eighths. His upper jaw is longer than his under; his nose stretches half an inch beyond his chin. The aperture of the mouth, when he keeps it close in profile, is a little more than an inch. The circumference of his snout around both his jaws is three inches and three-eighths; and round his head, just above his ears, eight inches and five eighths; the circumference of his neck is eight inches and a half, and its length one inch and a half. He seems more willing to turn his body altogether, than his neck alone. The circumference of his body, measured behind his fore-legs, is nine inches and three quarters, and that of his body where greatest, eleven inches and three eighths. The length of his fore-leg and toe is three inches and a half. The length of his hind-thigh is three inches and one-eighth, and the length of his hind-leg to the toe taken together, is two feet two inches. The length of the fore-foot is one inch and three eighths; the length of the middle toe six lines, and its breadth six lines also. The distance between the point of the nose and the first corner of the eye is one inch and five-eighths; and the length of his eye, from one angle to the other, four lines. The difference from the fore angle of his eye to the root of his ear, is one inch three lines, and the opening of his eye two lines and a half. His upper lip is covered with a pencil of strong hairs for mustachoes, the length of which are three inches and five-eighths, and those of his eye-brows two inches and two eighths.

He has no tail, and gives at first sight the idea of a rat, rather than of any other creature. His colour is a grey mixed with a reddish brown, perfectly like the wild or warren rabbit. His belly is white, from the point of the lower jaw, to where his tail would begin if he had one. All over his body he has scattered

ed hairs, strong and polished like his mustachoes; these are, for the most part, two inches and a quarter in length. His ears are round, not pointed. He makes no noise that ever I heard, but certainly chews the cud. To discover this was the principle reason of my keeping him alive. Those with whom he is acquainted he follows with great assiduity. The arrival of any living creature, even of a bird, makes him seek for a hiding-place; and I shut him up in a cage with a small chicken, after omitting feeding him a whole day; the next morning the chicken was unhurt, though the Ashkoko came to me with great signs of having suffered from hunger. I likewise made a second experiment, by inclosing two smaller birds with him for the space of several weeks; neither were these hurt, though both of them fed, without impediment, of the meat that was thrown into his cage; and the smallest of these, a kind of tit-mouse, seemed to be advancing in a sort of familiarity with him, though I never saw it venture to perch upon him, yet it would eat frequently, and at the same time, of the food upon which the Ashkoko was feeding; and in this consisted chiefly the familiarity I speak of, for the Ashkoko himself never shewed any alteration of behaviour upon the presence of the bird, but treated it with a kind of absolute indifference. The cage, indeed, was large, and the birds having a perch to sit upon in the upper part of it, they did not annoy one another.

In Amhara this animal is called Ashkoko, which, I apprehend, is derived from the singularity of those long hermaceous hairs, which, like small thorns, grow about his back, and which in Amhara are called Ashok. In Arabia and Syria he is called Israel's Sheep, or Ganmim Israel; for what reason I know not, unless it be chiefly from his frequenting the rocks of Horeb and Sinai, where the children of Israel made their forty

years peregrination: perhaps this name obtains only among the Arabians. I apprehend he is known by that of Saphan in the Hebrew, and is the animal erroneously called by our translators Cuniculus, the rabbit or coney.

Many are the reasons against admitting this animal, mentioned by Scripture, to be the rabbit. We know that this last was an animal peculiar to Spain, and therefore could not be supposed to be either in Judea or Arabia. They are gregarious indeed, and so far resemble each other, as also in point of size; but in place of seeking houses in the rocks, we know the cuniculus' desire is constantly sand. They have claws, indeed, or nails, with which they dig holes, or burrows; but there is nothing remarkable in them, or their frequenting rocks, so as to be described by that circumstance; neither is there any thing in the character of the rabbit that denotes excellent wisdom, or that they supply the want of strength by any remarkable sagacity. The saphan, then, is not the rabbit; which last, unless it was brought to him by his ships from Europe, Solomon never saw. It was not the rabbit's peculiar character to haunt the rocks. He was by no means distinguished for feebleness, or being any way unprovided with means of digging for himself holes. On the contrary, he was armed with claws, and it was his character to dig such, not in the rocks, but in the sands. Nor was he any way distinguished for wisdom, more than the hare, the hedge-hog, or any of his neighbours.

Let us now apply these characters to the Ashkoko. He is, above all other animals, so much attached to the rock, that I never once saw him on the ground, or from among large stones in the mouth of caves, where is his constant residence; he is gregarious, and lives in families. He is in Judea, Palestine, and Ara-

bia; and, consequently, must have been familiar to Solomon. For David describes him very pertinently, and joins him with other animals perfectly known to all men: "The hills are a refuge for the wild goats, and the rocks for the saphan, or ashkoko *." And Solomon says, "There be four things which are little upon the earth, but they are exceeding wise †:"— "The saphanim are but a feeble folk, yet make they their houses in the rocks ‡." Now this, I think, very obviously fixes the Ashkoko to be the saphan; for this weakness seems to allude to his feet, and how inadequate these are to dig holes in the rock, where yet, however, he lodges. These are, as I have already observed, perfectly round; very pulpy, or fleshy, liable to be excoriated or hurt, and of a soft fleshy substance. Notwithstanding which, they build houses in the very hardest rocks, more inaccessible than those of the rabbit, and in which they abide in greater safety, not by exertion of strength, for they have it not, but are truly, as Solomon says, a feeble folk, but by their own sagacity and judgment, and are therefore justly described as wise. Lastly, what leaves the thing without doubt is, that some of the Arabs, particularly Damir, say, that the saphan has no tail; that it is less than a cat, and lives in houses, that is, not houses with men, as there are few of these in the country where the saphan is; but that he builds houses, or nests of straw, as Solomon has said of him, in contradistinction to the rabbit, and rat, and those other animals that burrow in the ground, who cannot be said to build houses, as is expressly said of him.

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* Psalm civ. ver. 18.
† Prov. chap. xxx. ver. 24.
‡ Prov. chap. xxx. ver. 26.

The Christians in Abyssinia do not eat the flesh of this animal, as holding it unclean; neither do the Mahometans, who, in many respects of this kind, in abstinence from wild meat, have the same scruple as Christians. The Arabs in Arabia Petrea do eat it, and I am informed those on Mount Libanus also. Those of this kind that I saw were very fat, and their flesh as white as that of a chicken. Though I killed them frequently with the gun, yet I never happened to be alone so as to be able to eat them. They are quite devoid of all smell and rankness, which cannot be said of the rabbit.

I have no doubt, that the El Akbar and the El Webro of the Arabs, are both the same animal. The El Akbar only means the largest of the Mus-montanus, under which they have classed the Jerboa. The Jerd, and El Webro, as also the Ashkoko, or Akbar, answer to the character of having no tail.

BOOTED LYNX.

This is a very beautiful species of Lynx, and, as far as I know, the smallest of the kind; his body from the tip of the nose to the anus being only 22 inches. His back, neck, and forepart of his feet, are of a dirty grey. His belly is of a dirty white, spotted with undefined marks, or stains of red. Below his eyes, and on each side of his nose, is a reddish-brown, the back of his ears being of the same colour, but rather

darker; the inside of his ears is very thickly clothed with fine white hair, and at the end is the pencil of hairs distinctive of this genus. On the back of his fore feet, he has a black streak or mark, which reaches from his heel two inches up his leg. On his hinder foot he has the same, which reaches four inches from the heel, and ends just below the first joint, and from this circumstance I have given him his name.

His tail is 18 inches long; the lower part of it, for 6 inches, is occupied with black rings. Between these rings his tail is nearly white, the rest much the same colour as his back. From his nose to his occiput is four inches and three quarters. From one eye to the other, measuring across his nose, is one inch and three quarters. From the base of one ear to that of the other is two inches and two-eighths. The aperture of the eye three quarters of an inch, and of a yellow iris. The length of his ear, from its base to the point of the pencil of hairs at the top of it, four inches and three quarters. From the sole of his fore-foot to his shoulder, as he stands, 13 inches and three quarters. From the sole of his hind-foot to the top of his rump, 15 inches and a quarter.

He has very much the appearance of a common cat, both from the length of his tail and the shape of his head, which however is broader, and his neck thicker than that of a domestic animal. He is an inhabitant of Ras el Feel: and, small as he is, lives among those tyrants of the forest, the elephant and rhinoceros. I do not mean that he has any hunting connections with them, as the jackal with the lion; I rather think he avails himself of what is left by the hunters of the carcases of those huge beasts. But the chief of all his food is the Guinea hen, of which the thickets and bushes of this country are full. For these he lurks chiefly at the pools of water when they drink, and in

this act of violence I surprised him. He is said to be exceedingly fierce, and to attack a man if any way pressed. At this time he mounts easily upon the highest trees; at other times he is content with hiding himself in bushes, but in the season of the fly he takes to holes and caverns in the ground. I never saw its young ones, nor did I ever hear any noise it makes, for the shot killed him outright, but did not in the least disfigure him; so that the reader may depend upon this representation of him, as I have given it with all possible truth and precision.

OF BIRDS.

The number of birds in Abyssinia exceeds that of other animals beyond proportion. The high and low countries are equally stored with them: the first kind are the carnivorous birds. Many species of the eagle and hawk, many more still of the vulture kind, overstock all parts of this country. That species of glede called Haddaya, so frequent in Egypt, comes very punctually into Ethiopia, at the return of the sun, after the tropical rains. The quantity of shell-fish which then covers the edges of the desert, and leaves the salt springs where they have been nourished, surprised by the heat, and deserted by the moisture, are the first food these birds find in their way. They then are supplied in the neighbouring Koila, by the carcases of those large beasts, the elephant, rhinoceros, and giraffa, the whole tribe of the deer kind, and the wild asses, that are slain by the hunters, part of which only are used in food.

The vast quantity of field-rats and mice that appear after harvest, and swarm in the cracks, or fissures in the ground, are their next supply. But, above all, the

great slaughter made of cattle upon the march of the army, the beasts of burden which die under carriage and ill-treatment, the number of men that perish by disease and by the sword, whose carcases are never buried by this barbarous and unclean people, compose such a quantity, and variety of carrion, that it brings together at one time a multitude of birds of prey; it would seem there was not such a number in the whole earth. These follow the camp, and abide by it; indeed they seem another camp round it; for, besides those that ventured among the tents, I have seen the fields covered on every side as far as the eye could reach, and the branches of the trees ready to break under the pressure of their weight.

This unclean multitude remain together in perfect peace till the rains became constant and heavy; which deprive them of their food, by forcing the hunters and armies to retire home. Nor are other circumstances wanting equally obvious, which account for the great number of birds that live on insects. The fly, of which we have already spoken so often, reigns in great swarms from May to September on the plains, and in all the low country down to the sands of Atbara. These are attended by a multitude of enemies, some of whom seek them for food; other seem to persecute them from hatred, or for sport, from the multitude they scatter upon the ground, without further care concerning them. Honey is the principal food of all ranks of people in Abyssinia, and consequently a multitude of bees are produced everywhere. Part of these are kept in large cages, or baskets, hung upon the trees; others attach themselves to the branches, others build nests in the soft wood of the trees, especially the Bohabab, whose large and fragrant flower furnishes them with a honey which it strongly perfumes. The honey generally borrows its colour from

the flowers and herbs from whence it is gathered. At Dixan we were surprised to see the honey red like blood; and nothing can have an appearance more disgusting than this when mixed with melted butter. There are bees which build in the earth, whose honey is nearly black, as has been observed by the jesuit Jerome Lobo; I willingly place this truth to his credit, the only one, I think, I can find in his natural history; a small atonement for the multitude of falsehoods this vain and idle romancer has told on every occasion. Nor are the granivrous birds fewer in number, or worse provided for; all the trees and shrubs in Abyssinia bear flowers, and consequently seeds, berries, or fruit, of some kind or other; food for all or some particular species of birds. Every tree and bush carries these likewise in all stages of ripeness, in all seasons of the year.

This is, however, not to be understood as meaning that any tree produces in the same part, fruit or flowers more than once a-year; but the time of each part's bearing is very particularly distributed. The west side of every tree is the first that blossoms; there its fruit proceeds in all stages of ripeness till it falls to the ground. It is succeeded by the south, which undergoes the same process. From this it crosses the tree, and the north is next in fruit; last of all comes the east, which produces flowers and fruit till the beginning of the rainy season. In the end of April new leaves push off the old ones without leaving the tree at any time bare, so that every tree in Abyssinia appears to be an evergreen. The last I saw in flower was the coffee tree at Emfras the 20th of April 1770: from this time till the rains begin, and all the season of them, the trees get fully into leaf, and the harvest, which is generally in these months throughout Abyssinia, supplies the deficiency of the seed upon bushes

and trees. All the leaves of the trees in Abyssinia are very highly varnished, and of a tough leather-like texture, which enables them to support the constant and violent rains under which they are produced.

This provision made for granivorous birds, in itself so ample, is doubled by another extraordinary regulation. The country being divided by a ridge of mountains, a line drawn along the top of these divides the seasons likewise; so that those birds, to whom any one food is necessary, become birds of passage, and, by a short migration, find the same seasons, and the same food, on the one side, which the rains and change of weather had deprived them of on the other.

There is no great plenty of water-fowl in Abyssinia, especially of the web-footed kind. I never remember to have seen one of these that are not common in most parts of Europe. Vast variety of storks cover the plains in May, when the rains become constant. The large indigenous birds that reside constantly on the high mountains of Samen and Taranta, have most of them an extraordinary provision made against the wet and the weather; each feather is a tube, from the pores of which issues a very fine dust or powder, in such abundance as to stain the hand upon grasping them. This I shall presently mention in the description of one of these birds, the golden eagle of Lamalmon. In looking at this dust through a very strong magnifying power, I thought I discerned it to be in form of a number of fine feathers.

Though all the deep and grassy bogs have snipes in them, I never once saw a woodcock: swallows there are, of many kinds unknown in Europe; those that are common in Europe appear in passage at the very season when they take their flight from thence. We saw the greatest part of them in the island of Masuah, where they lighted and tarried two days, and then

proceeded with moon-light nights to the south-west. But I once saw in the country of the Baharnagash, in the province of Tigre, the blue forked-tailed swallow, which builds in the windows in England, making his nest out of season, when he should have been upon his migration. This I have already taken notice of in my journey from Masuah to Gondar.

There are few owls in Abyssinia; but those are of an immense size and beauty. The crow is marked white and black nearly in equal portions. There is one kind of raven; he, too, of a large size, his feathers black intermixed with brown; his beak tipt with white, and a figure like a cup or chalice of white feathers on his occiput, or hinder part of his head. I never saw either sparrow, magpie, or bat, in Abyssinia. Pigeons are there in great numbers, and of many varieties; some of them very excellent eating. I shall hereafter describe one of them, whose name is Waalia. All the pigeons but one sort are birds of passage; that one lives in the eaves of houses, or holes in the walls, and this is not eaten, but accounted unclean, for a very whimsical reason; they say it has claws like a falcon, and is a mixture from that bird. The same sort of imagination is that of the Turks, who say, that the turkey, from the tuft of black hair that is upon his breast, partakes of the nature of the hog. This pigeon's feet are indeed large, but very different in formation from that of the falcon.

There are no geese in Abyssinia, wild or tame, excepting what is called the Golden Goose, Goose of the Nile, or Goose of the Cape, common in all the south of Africa: these build their nests upon trees and, when not in water, generally sit upon them.

I have already spoken of fishes, and have entered very sparingly into their history. These, and other marine productions of the Arabian Gulf, or even the

small share that I have painted and collected, would occupy many large volumes to exhibit and describe, and would cost in the engraving a much larger sum than I have any prospect of ever being able to afford.

NISSER, OR GOLDEN EAGLE.

I HAVE ventured, from his colour, to call this bird the Golden Eagle, by way of distinction: as its Ethiopic name, Nisser, is only generic, and imports no more than the English name, Eagle. He is called by the vulgar, Abou Duch'n, or Father Long Beard, which we may imagine was given him from the tuft of hair he has below his beak.

I suppose him to be not only the largest of the eagle kind, but surely one of the largest birds that flies. From wing to wing he was 8 feet 4 inches. From the tip of his tail to the point of his beak when dead, 4 feet 7 inches. He weighed 22 pounds, was very full of flesh. He seemed remarkably short in the legs, being only four inches from the joining of the foot to where the leg joins the thigh, and from the joint of the thigh to the joining of his body 6 inches. The thickness of his thigh was little less than 4 inches; it was extremely muscular, and covered with flesh. His middle claw was about two inches and a half long, not very sharp at the point, but extremely strong. From the root of the bill to the point was three inches and a quarter, and one inch and three quarters in breadth

at the root. A forked brush of strong hair, divided at the point into two, proceeded from the cavity of his lower jaw, at the beginning of his throat. He had the smallest eye I ever remember to have seen in a large bird, the aperture being scarcely half an inch. The crown of his head was bare or bald, so was the front where the bill and skull joined.

This noble bird was not an object of any chace or pursuit, nor stood in need of any stratagem to bring him within our reach. Upon the highest top of the mountain Lamalmon, while my servants were refreshing themselves from that toilsome rugged ascent, and enjoying the pleasure of a most delightful climate, eating their dinner in the outer air, with several large dishes of boiled goat's flesh before them, this enemy, as he turned out to be to them, appeared suddenly; he did not stoop rapidly from a height, but came flying slowly along the ground, and sat down close to the meat, within the ring the men had made round it. A great shout, or rather cry of distress, called me to the place. I saw the eagle stand for a minute, as if to recollect himself, while the servants ran for their lances and shields. I walked up as nearly to him as I had time to do. His attention was fully fixed upon the flesh. I saw him put his foot into the pan, where was a large piece in water, prepared for boiling; but finding the smart which he had not expected, he withdrew it, and forsook the piece which he held.

There were two large pieces, a leg and a shoulder, lying upon a wooden platter; into these he trussed both his claws and carried them off, but I thought he looked wistfully at the large piece which remained in the warm water. Away he went slowly along the ground, as he had come. The face of the cliff, over which criminals are thrown, took him from our sight. The Mahometans that drove the asses, who had, as

we have already observed in the course of the journey, suffered from the hyæna, were much alarmed, and assured me of his return. My servants, on the other hand, very unwillingly expected him, and thought he had already more than his share.

As I had myself a desire of more intimate acquaintance with him, I loaded a rifle-gun with ball, and sat down close to the platter by the meat. It was not many minutes before he came, and a prodigious shout was raised by my attendants, He is coming! He is coming! enough to have discouraged a less courageous animal. Whether he was not quite so hungry as at the first, or suspected something from my appearance, I know not, but he made a small turn, and sat down about ten yards from me, the pan with the meat being between me and him. As the field was clear before me, and I did not know but his next move might bring him opposite to some of my people, and so that he might actually get the rest of the meat and make off, I shot him with a ball through the middle of his body, about two inches below the wing, so that he lay down upon the grass without a single flutter. Upon laying hold of his monstrous carcase, I was not a little surprised at seeing my hands covered and tinged with yellow powder or dust. Upon turning him upon his belly, and examining the feathers of his back, they produced a brown dust, the colour of the feathers there. This dust was not in small quantities, for, upon striking his breast, the yellow powder flew about in fully greater quantity than from a hair-dresser's powder-puff. The feathers of the belly and breast, which were of a gold colour, did not appear to have any thing extraordinary in their formation; but the large feathers in the shoulder and wings seemed apparently to be fine tubes, which, upon pressure, scattered this dust upon the finer part of the feather; but

this was brown, the colour of the feathers of the back. Upon the side of the wing, the ribs, or hard part of the feather, seemed to be bare, as if worn, or, I rather think, were renewing themselves, having before failed in their functions.

What is the reason of this extraordinary provision of nature is not in my power to determine. As it is an unusual one, it is probably meant for a defence against the climate, in favour of those birds which live in those almost inaccessible heights of a country, doomed, even in its lower parts, to several months of excessive rain. The pigeons we saw upon Lamalmon had not this dust in their feathers, nor had the quails; from which I guess these to be strangers, or bird of passage, that had no need of this provision, created for the wants of the indigenous, such as this eagle is; for he is unknown in the low country. That same day I shot a heron, in nothing different from ours, only that he was smaller, who had upon his breast and back a blue powder, in full as great quantity as that of the eagle.

BLACK EAGLE.

This beautiful bird was the first subject that suffered the loss of liberty, after the king and whole army had vindicated theirs, had passed the Nile in circumstances scarcely within the bounds of credibi-

lity, had escaped all the deep-laid schemes of Fasil, and, by a train of accidents almost miraculous, passed triumphantly on before him, after the battle of Linjour, having joined Kefla Yasous, advanced and encamped at Dingleber, the 28th of May 1770.

This bird, who, from the nobleness of his kind, was appositely enough thought to be a type of the king, fell by a fate in which he still more resembled him, overpowered by the strength and number of a species of birds in character infinitely below him. It has been repeatedly observed in the course of my narrative, that an inconceivable number of birds and beasts of prey, especially the former, follow an Abyssinian army pace by pace, from the first day of its march till its return, increasing always in prodigious proportion the more it advances into the country. An army there leaves nothing living behind, not the vestige of habitation: but the fire and sword reduces every thing to a wilderness and solitude.

The beasts and birds unmolested have the country to themselves, and increase beyond all possible conception. The slovenly manner of this savage people, who after battle neither bury friends nor enemies, the quantity of beasts of burden that die perpetually under the load of baggage, and variety of mismanagement, the quantity of offal and half-eaten carcases of cows, goats, and sheep, which they consume on their march for their sustenance, all furnish a stock of carrion sufficient to occasion contagious distempers, were there not such a prodigious number of voracious attendants, who consume them almost before putrefaction. In their voracious stomachs lies the grave of the bravest soldier, unless very high birth or office, or very extraordinary affection in his attendants, procure him a more decent, though more uncommon fate, a sepulchre in a neighbouring church-yard. There is no

giving the reader any idea of their number, unless by comparing them to the sand of the sea. While the army is in motion, they are a black canopy, which extends over it for leagues. When encamped, the ground is discoloured with them, beyond the sight of the eye; all the trees are loaded with them. I need not say that these are all carrion birds, such as the vulture, kite, and raven; that is, a species to which nature has refused both the inclination and the power of feeding upon living subjects.

By what accident this small eagle, who was not a carrion bird, came among these cowardly and unclean feeders, is more than I can say; but it met the fate very common to those who assort with bad company, and those of sentiments and manners inferior to their own. One of these, a kite, vulture, or raven, I know not which, struck the poor eagle down to the ground, just before the door of the king's tent, and hurt him so violently, that he had scarcely strength to flutter under the canopy where the king was sitting; where pages and officers of the bed chamber soon seized him. It was not long before they made the application that the king was to be dethroned by a subject, and Fasil was in every body's mouth. The omen was of a kind too unpleasant to be dwelt upon; the sensible people of the attendants hurried it away, and it of course came to me, with all the circumstances of the accident, the moral of that tale, and twenty prophecies that were sent to confirm it. I confess my own weakness: at first it made a strong impression upon me. In the moment the passage of Shakespeare came into my mind,

On Tuesday last,
A falcon, towering in his pride of place,
Was by a mousing owl hawked at and killed.

And this recollection occupied my mind so forcibly, that I stood for a moment speechless, and, as it were, rivetted to the ground. This behaviour, unusual in me, who used always to laugh at their presages, and prophecies, was observed by the page that brought me the bird, and was reported to the king; and though he did not speak of it that time, yet some days after, when I was taking my leave of him, on his retreat from Gondar to Tigre, he mentioned it to me, and said we were mistaken, for the omen referred to Powussen of Begemder, and not to Waragna Fasil.

After sketching his genteel and noble manner while alive, our unfortunate prisoner found his death by the needle, was put out of sight, and carried to Gondar, where the drawing was finished. He was altogether of a dark brown, or chesnut, leading to black. The whole length, from the extremity of the tail to the nose, was two feet four inches. The breadth, from wing to wing, four feet six inches. He was very lean, and weighed something less than five pounds. The fourth feather of his wing, after the three largest, was white. The feathers of the lower side of his tail were of a bluish brown, checkered with white, and those of the upper side of the tail were black and white alternately. His thighs were thick covered with feathers, and so were his legs, down to the joining of the foot. His feet were yellow, with strong black claws. The inside of his wings was white, with a mixture of brown. His leg, from the joining of the foot, was three inches. His beak, from the point to where the feathers reached, was two inches and a quarter. The length of his crest, from the head to the longest feather, five inches. The eye was black, with a cast of fire-colour in it, the iris yellow, and the whole eye exceedingly beautiful. He seemed

wonderfully tame, or rather sluggish, but whether that was from his nature or misfortune I cannot be a judge, never having seen another.

RACHAMAH.

This bird is met with in some places in the south of Syria and in Barbary, but is no where so frequent as in Egypt and about Cairo. It is called, by the Europeans, Poule de Pharaon, the hen or bird of Pharaoh. It is a vulture of the lesser kind, not being much larger than our rook or crow, though, by the length of its wings, and the erect manner in which it carries its head, it appears considerably larger. In Egypt and all over Barbary, it is called Rachamah; and yet it has been very much doubted what bird this was, as well as what was the origin of that name. Some of the Arabs will have it derived from Archam, which signifies variegated, or of different colours. It has been answered, that this is not the derivation, as Archam in Arabic signifies variegated, or of more colours than two or three blended together, whereas this is in its feathers only black and white, separate from one another, and cannot be called variegated. But I must here observe, that this is by no means a proper interpretation of the Arabic word. Among many examples I could give, I shall adduce but one. There is a particular kind of sheep in Arabia Felix,

whose head and part of the neck are black, and the rest of the beast white; it is chiefly found between Mocha and the Straits of Babelmandeb. This, in Arabic, is called Rachama, for no other reason but because it is marked black and white, which are precisely the two colours which distinguish the bird before us.

But I still am induced to believe the origin of this bird's name has an older and more classical derivation than that which we have just spoken of. We know from Horus Apollo, in his book upon hieroglyphics, that the Rachma, or she-vulture, was sacred to Isis, and that its feathers adorned the statue of that goddess. He says it was the emblem of parental affection, and that the Egyptians, about to write an affectionate mother, painted a she-vulture. He says further, that this female vulture, having hatched its young ones, continues with them one hundred and twenty days, providing them with all necessaries; and, when the stock of food fails them, she tears off the fleshy part of her thigh, and feeds them with that and the blood which flows from the wound. Rachama, then, is good Hebrew; it is from Rechem, female love, or attachment, from an origin which it cannot have in men. In this sense we see it used with great propriety in the first book of Kings *, in Isaiah †, and in Lamentations ‡; and it seems particularly to mean what the Egyptians made it a hieroglyphic of in very ancient ages, and before the time of Moses, maternal affection towards their pro-

* Chap. iii. ver. 26.
† Chap. xlix. ver. 15.
‡ Chap. iv. ver. 10.

geny. No mention is here made of the male Rachama, nor was he celebrated for any particular quality.

From this silence, and the negative character in him, arose a fable that there was no male in this species. Horus Apollo*, after naming this bird always in the feminine gender, tells us roundly, that there is no male of the kind, but that the female conceives from the south wind. Plutarch †, Ammianus ‡, and all the Greeks, say the same thing; and Tzetzes ‖, after having repeated the same story at large, tells us that he took it all from the Egyptians: so there seems to be little doubt either of the origin or meaning of the name.

The fathers in the first ages, after the death of Christ, seem to have been wonderfully pressed in point of argument, before they could have recourse to a fable like this, to vindicate the possibility of the Virgin Mary's conception without human means. Tertullian §, Origines ¶, Bazil **, and Ambrosius ††, are all wild enough to found upon this ridiculous argument, and little was wanting for some of these learned ones to fix this fable upon Moses, who probably knew it as a vulgar error before his time, but was very far from paying any regard to it. On the contrary, it is with the utmost propriety and precision, that, speaking to the people, he calls it Rachama in the feminine, because he was then giving them a list

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* Hieroglyph. lib. i. cap. 11.
† Plut. in Quest. Rom. quest. 93.
‡ Lib. xvii.
‖ Chil. 12. hist. 439.
§ In Valentin. cap. 10.
¶ Lib. i. contra Celsum.
** In Hexaem. Homil. 8.
†† In Hexaem. page 27.

of birds forbidden to be eaten *, among which he selected the female vulture, as that was best known, and the great object of idolatry and superstition. The male, and all the lesser abominations of that species, he included together in the word that followed, *his* kind; though the English translator, by calling the female vulture *him*, has introduced an impropriety that there was not the least foundation for. That Moses was not the author of, or believer in, this Egyptian fable, is plain from a verse in Exodus, where, at another time, he speaks of this bird as a male, and calls him Racham, and not Rachama.

It will not be improper that I here take notice, that the English translator, by his ignorance of language, has lost all the beauty, and even the sense of the Hebrew original. He makes God say, "Ye have seen what I did unto the Egyptians, and how I bore you on eagle's wings, and brought you unto myself†." Now, if the expression had been really Eagle, the word would have been Nisr, and would have signified nothing; but, in place of Eagle, God says Vulture, the emblem of maternal affection and maternal tenderness towards his children, which has a particular connection with "brought you unto myself;" so that the passage will run thus; Say to the children of Israel, See how I have punished the Egyptians, while I bore you up on the wings of the Rachama, that is, of parental tenderness and affection, and brought you home to myself. It is our part to be thankful that the truths of Holy Scripture are preserved to us entire, but still it is a rational regret that great part of the beauty of the original is lost by this kind of interpretation.

* Deut. chap. xiv. ver. 13.
† Exod. chap. xix. ver. 4.

The point of the beak of this bird is black, very sharp and strong for about three quarters of an inch; it is then covered by a yellow, fleshy membrane, which clothes it, as it were, both above and below, as likewise the forepart of the head and throat, and ends in a sharp point before, nearly opposite to where the neck joins the breast; this membrane is wrinkled, and has a few hairs growing thinly scattered upon the lower part of it. It has large, open nostrils, and prodigious large ears, which are not covered by any feathers whatever. The body is perfectly white from the middle of the head, where it joins the yellow membrane, down to the tail. The large feathers of its wing are black; they are six in number. The lesser feathers are three, of an iron-grey, lighter towards the middle; and these are covered with three others lesser still, but of the same form, of an iron rusty colour. Those feathers that cover the large wing-feathers are at the top, for about an inch and a quarter, of an iron grey, but the bottom is pure white. The tail is broad and thick above, and draws to a point at the bottom. It is not composed of large feathers, and is not half an inch longer than the point of its wings. Its thighs are clothed with a soft down-like feather, as far as the joint. Its legs are of a dirty white, inclining to flesh-colour, rough, with small tubercules which are soft and fleshy. It has three toes before, and one behind; the middle of these is considerably the longest; they are armed with black claws, rather strong than pointed, or much crooked. It has no voice that ever I heard, generally sits single, and oftener sits and walks upon the ground, than upon trees. It delights in the most putrid and stinking kind of carrion, has itself a very strong smell, and putrifies very speedily.

It is a very great breach of order, or police, to kill any one of these birds near Cairo. But as there are

few of its species in Egypt, and its name is the same all over Africa and Arabia, it seems to me strange that the Arabian or Hebrew writers should have found so much difficulty in discovering what was the bird. It lays but two eggs, and builds its nest in the most desert parts of the country. More of its history or manners I do not know. The books are full of fanciful stories concerning it, which the instructed reader at first sight will know to be but fable.

ERKOOM.

It would appear that this bird is part of a large tribe, the greatest variety in which lies in the beak and horn. The latter he wears sometimes upon the beak, and sometimes upon the forehead, above the root of the beak. These are the only parts that appear in collections. I gave to the cabinet of the king of France the first bird of this kind seen entire; and I have here exhibited the first figure and description of it that ever was seen in natural history, drawn from the life. In the east part of Abyssinia, in the language of Tigre, it is called Abba Gumba; on the western side of the Tacazze it is called Erkoom; the first of its names is apparently from the groaning noise it makes, the second has no signification in any language that I know.

At Ras el Feel, in my return through Sennaar, I made this drawing from a very entire bird, but slight-

ly wounded. It was in that country called Teir el Naciba, the bird of destiny. This bird, or the kind of it, is by naturalists called the Indian crow, or raven; for what reason it is thus classed is more than I can tell. The reader will see when I describe his particular parts, whether they agree with those of the raven or not. There is one characteristic of the raven which he certainly has, he walks, and does not hop or jump in the manner that many others of that kind do; but then he, at times, runs with very great velocity, and, in running, very much resembles the turkey, or bustard, when his head is turned from you.

The colour of its eye is of a dark brown, or rather reddish cast; still darker as it approaches the pupil; it has very large eyelashes, both upper and lower, but especially the upper. From the point of the beak to the extremity of the tail is three feet ten inches; the breadth from one point of the wing to the other, extended, is six feet, and the length twenty two inches. The length of the neck ten inches, and its thickness three inches and a half; the length of the beak, measuring the opening near the head, straight to the point, ten inches; and from the point of the beak to the root of the horn, seven inches and three-eighths. The whole length of the horn is three inches and a half. The length of the horn, from the foot to the extremity, where it joins the beak, is four inches. The thickness of the beak, in front of the opening, is one inch and seven eighths. The thickness of the horn in front is one inch and five-eighths. The horn in height, taken from the upper part of the point to the beak, two inches. The length of the thighs, seven inches, and that of the legs, six inches and five-eighths. The thickness in profile, seven lines, and in front, four lines and a half. It has three toes before, and one behind; but they are not very strong, nor seemingly

made to tear up carcases. The length of the foot to the hinder toe is one inch six lines, the innermost is one inch seven lines, the middle two inches two lines, and the last outer one two inches one line.

The bird is all of a black, or rather black mixed with soot-colour; the large feathers of the wing are ten in number, milk-white both without and within. The tip of his wings reaches very nearly to his tail; his beak and head, measured together, are eleven inches and a half, and his head three inches and a quarter. At his neck he has those protuberances like the Turkey-cock, which are light blue, but turn red upon his being chafed, or in the time the hen is laying.

I have seen the erkoom with eighteen young ones; it runs upon the ground much more willingly than it flies; but when it is raised, flies both strong and far. It has a rank smell, and is said to live in Abyssinia upon dead carcases. I never saw it approach any of these; and what convinces me this is untrue, is, that I never saw one of them follow the army, where there was always a general assembly of all the birds of prey in Abyssinia.

It was very easy to see what was its food, by its place of rendezvous, which was in the fields of teff, upon the tops of which are always a number of green beetles; these he strips off by drawing the stalk through his beak; and which operation wears his beak so, that it appears to be serrated; and, often as I had occasion to open this bird, I never found in him any thing but the green scarabeus, or beetle. He has a putrid or stinking smell, which I suppose is the reason he has been imagined to feed upon carrion.

The erkoom builds in large, thick trees, always, if he can, near churches; has a covered nest like that of a magpie, but four times as large as the eagle's.

It places its nest firm upon the trunk, without endeavouring to make it high from the ground; the entry is always on the east side. It would seem that the Indian crow of Bontius is of this kind: it is difficult, however, to believe, that his natural food is nutmegs; for there seems nothing in his structure or inclination, which is walking on the ground, that is necessary or convenient for taking such food.

ABOU HANNES.

The ancient and true name of this bird seems to be lost. The present one is fancifully given from observation of a circumstance of its history; translated, it signifies Father John; and the reason is, that it appears on St John's day, the precise time when first the fresh water of the tropical rains is known in Egypt to have mixed with the Nile, and to have made it lighter, sweeter, and more exhaleable in dew, that is, in the beginning of the season of the tropical rains, when all water-fowl, that are birds of passage, resort to Ethiopia in great numbers.

As I have observed, this bird has lost its name; so in the history of Egypt and Ethiopia we have lost a bird, once very remarkable, of which now nothing remains but the name; this is the Ibis, to which divine honours were paid, whose bodies were embalmed and preserved with the same care as those of men. There

still remain many repositories full of them in Egypt, and appear everywhere in collections in the hands of the curious. Though the manner in which these birds are prepared, and caustic ingredients, with which the body is injected, have greatly altered the consistency of their parts, and the colour of their plumage, yet it is from these, viewed and compared deliberately, and at leisure, that I am convinced the Abou Hannes is neither more nor less than the Ibis.

Several authors treating of this bird, have involved it in more than Egyptian darkness. They have first said it was a stork, then the hæmatopus, or red legged heron; they then say its colour is of a fine shining black, its beak and legs of a deep red. Some have said it was from it that men learned the way to administer clysters, others that it conceived at the beak, and even laid eggs that way, and that its flesh is sweet and red like that of a salmon. All these and many more are fables. We know from Plutarch, that in the plumage it is black and white like the pelargus. And the mummy pits, by furnishing part of the bird itself, confirm us in the opinion.

The Abou Hannes has a beak shaped like that of a curlew, two-thirds of which is straight, and the remaining third crooked; the upper part of a green, horny substance, and the lower black. From the occiput to where it joins the beak is four inches and a half. Its leg from the lower joint of the thigh to the foot, is six inches, the bone round and strong, according to the remark of Cicero; and from the lower joint of the thigh, to where it joins the body, is five inches and a half. The height of the body, as it stands, from the sole of its foot to the middle of the back, is nineteen inches. The aperture of the eye is one inch. Its feet and legs are black; has three toes before, armed with sharp straight claws: it has a toe also

behind. Its head is brown; and the same colour reaches down to the back, or where the back joins with the neck. Its throat is white; so are its breast, back, and thighs. The largest feathers of its wings are a deep black, for thirteen inches from the tail, and from the extremity of the tail, six inches up the back, black likewise.

Now the measures of the beak, the tibia, the thigh-bone, and the skull, compared with the most perfect of the embalmed birds taken from the mummy-pits, do agree in every thing as exactly as can be expected. The length of the beak in my drawing seems to exceed that of the embalmed bird, but I will not be positive this small error is not in the design; though the white feathers are scorched in the embalmed birds, yet there is no difficulty in perceiving the colour distinctly; there is less in distinguishing the black upon the wings and above its rump. The measure of both so exactly agree, that they can scarcely be mistaken.

The reason, we are told, why this bird was held in such veneration in Egypt, was the great enmity it had to serpents, and the use of freeing the country from them; but for my own part I must confess, that as I know, for certain, there is no quantity of serpents in Egypt, as the reason of things is that they should be few, so I can never make myself believe they ever were in such abundance, as to need any particular agent to distinguish itself by destroying them. Egypt Proper, that is, the cultivated and inhabited part of it, is overflowed for five months every year by the Nile, and it is impossible vipers can abound where there is such long and regular refrigerations. The viper casts his skin in May, and is immediately after in his renewed youth and fulness of vigour. All this time he would be doomed in Egypt to live under water, or hid in some hole, and this is the time when the Ibis is

in Egypt, so that the end of his coming would be frustrated by the absence of his enemy. The vipers have their abode in the sandy desert of Libya, where even dew does not fall, where the sand is continually in motion, parched with hot winds, and glowing with the scorching rays of the sun. There the Ibis could not live: the country is not inhabited by man; and, consequently, vipers there would be no nuisance. Nay, we know these vipers of Libya are an article of commerce in Egypt. The Theriac is composed of them at Venice and at Rome, and they are dispersed for the uses of medicine throughout the different parts of the world.

Now, in this light, the Ibis could not live among them, nor would he be of benefit even if he could; but as we have it from a number of credible historians, that the Ibis was plentiful in Egypt; that vipers, at least in some parts of it, were so frequent as to be a nuisance; and that we know as surely two other things, that neither the vipers are a nuisance, nor is the Ibis in Egypt at this day, we must look for some change in the economy of the country which can account for this.

We know, in a manner not to doubt, that in ancient times Egypt was inhabited, and extended to the edges of the Libyan Desert; nay, in some places, considerably into it. Large lakes were dug in this country by their first kings, and these, filled in the time of the Nile's inundation, continued immense reservoirs, which were let out by degrees to water the plantations and pleasure-ground that had been created by man, in what was formerly a desert. Nothing in fact, was wanting but water, and these large lakes supplied this want abundantly, by furnishing water of the purest and most excellent kind. In the neighbourhood of these artificial plantations, there can be no doubt the viper must be

a nuisance. Being indigenous in this domicil, it is not probable he would quit it easily, and any deficiency of them in number would not have failed to be supplied from the deserts in the neighbourhood. The prodigious pools of stagnant water would bring the Ibis thither, and place him near his enemy; and after man had once discerned his use, gratitude would soon lead him to reward him.

But afterwards, when these immense lakes, and the conduits leading to them, were neglected, and the works ruined which conducted these artificial inundations, and covered the deserts of Lybia with verdure; when war and tyranny, and every sort of bad government, made people fly from the country, or live precariously and insecurely in it, all this temporary paradise vanished: the land was overflowed no more; the sands of the desert resumed their ancient station; there were no inhabitants in the country, no pools of water for the Ibis, nor was the viper a nuisance? The Ibis retired to his native country Ethiopia, in the lower part of which, that is, in a hot country full of pools of stagnant water, he remains, and there I found him.

It is probable, in Egypt he had increased greatly by the quantity of food and good entertainment he had. Upon these failing, he probably died, and wore out of Egypt; and in the proportion in which he was at first created, which seems to have been a slender one, he remained in his native Ethiopia; for his emigration and increase in Egypt were merely accidental. This, I apprehend, is the true cause why the Ibis is now no longer known in Egypt; but I am satisfied to restore him to natural history, with at least a probable conjecture, why he is now unknown in those very regions where once he was worshipped as a god. His figure appears frequently upon the obelisks among the hie-

roglyphics, and further confirms my conjecture that this is the bird.

The Count de Buffon has published the bird, which he calls the white Ibis of Egypt, the half of his head crimson, with a strong beak of a gold colour, liker to that of a toucan, and long, purple, weak legs, and a thick neck; in short, having none of the characters of the bird it is intended to represent.

The reader may be assured there is no such Ibis in Egypt; none ever appeared from the catacombs but what were black and white, as historians have described†; so that this is so disguised by the drawing and colouring as not to be known, or else came from some other country than Egypt.

MOROC.

I HAVE already said, in the Introduction which immediately precedes the history of birds, that among those that live upon insects, there are some that attach themselves to flies in general, and others that seem to live upon bees alone: Of this last sort is the bird now before us. I never saw him in the low country where the fly is, nor indeed anywhere but in the

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* Buffon, Plan. Enlum. 789.
† Vide Plutarch. de Iside.

countries where honey is chiefly produced as revenue; such as the country of the Agow, Goutto, and in Belessen.

He seems to pursue the bees for vengeance, or diversion, as well as for food, as he leaves a quantity of them scattered dead upon the ground, without seeking further after them; and this pastime he unweariedly pursues without interruption, all the day long; for the Abyssinians do not look so near, or consider things so much in detail, as to imagine all the waste which he commits can make any difference in their revenue.

His name is Maroc, or Moroc; I suppose from Mar, honey, though I never heard he was further concerned in the honey than destroying the bees. In shape and size he seems to be a cuckoo, but differs from him in other respects. He is drawn here in his natural size, and in all respects so minutely attended to, that I scarcely believe there is a feather amissing.

The opening of his mouth is very wide when forced open, reaching nearly to under his eyes. The inside of his mouth and throat are yellow, his tongue sharp-pointed. It can be drawn to almost half its length out of its mouth beyond the point of its beak, and is very flexible. Its head and neck are brown, without mixture. It has a number of exceeding small hairs, scarcely visible, at the root of its beak. His eye-brows are black likewise. His beak is pointed, and very little crooked; the pupil of his eye is black, surrounded with an iris, of a dusky dull red. The fore-part of his neck is light-yellow, darker on each side than in the middle, where it is partly white; the yellow on each side reaches near the shoulder, or round part of the wing; from this his whole breast and belly is of a dirty white to under the tail; from this, too, his feathers begin to be tipt gently with white, as are all those that cover the outside of his wing; but the

white here is clear, and the size increases with the breadth and length of the feathers. The large feathers of his wing are eight in number; the second in size are six. The tail consists of twelve feathers; the longest three are in the middle, they are closely placed together, and the tail is of an equal breadth from top to bottom, and the end of the feathers tipt with white. Its thighs are covered with feathers of the same colour as the belly, which reach more than half way down his leg; his legs and feet are black, marked distinctly with scales. He has two toes before, and one behind, each of which have a sharp and crooked claw. I never saw his nest; but in flying, and while sitting, he perfectly resembles the cuckoo. I never heard, nor could I learn from others, that he had any voice or song. He makes a sharp snapping noise, as often as he catches the bees, which is plainly from closing his beak.

Jerome Lobo, whom I have often mentioned, describes this bird, and attributes to him a peculiar instinct, or faculty of discovering honey; he says, when this bird has discovered any honey, he repairs to the high way, and when he sees a traveller, he claps with his wings, sings, and, by a variety of actions, invites him to follow him, and flying from tree to tree before him, stops where the honey is discovered to be, and there he begins to sing most melodiously.

The ingenious Dr Sparman could not omit an opportunity of building a story upon so fair a foundation. He, too, gives an account of a cuckoo, in size and shape resembling a sparrow; and then gives a long description of it in Latin, from which it should not resemble a sparrow. This he calls Cuculus Indicator*.

* Sparman's Voyage, vol. ii. p. 197.

It seems it has a partition treaty at once both with men and foxes; not a very ordinary association.

To these two partners he make his meaning equally known, by the alluring sound, as he calls it, of Teherr Teherr, which we may imagine, in the Hottentot language of birds, may signify Honey; but it does not sing, it seems, so melodiously as Jerome Lobo's bird. I cannot, for my own part, conceive, in a country where so many thousand hives of bees are, that there was any use for giving to a bird a peculiar instinct, or faculty, of discovering honey, when, at the same time, nature had denied him the power of availing himself of any advantage from the discovery; for man seems, in this case, to be made for the service of the Moroc: which is very different from the common ordinary course of things: man certainly needs him not; for on every tree, and on every hillock, he may see plenty of combs at his own deliberate disposal. I cannot, then, but think, with all submission to these natural philosophers, that the whole of this is an improbable fiction; nor did I ever hear a single person in Abyssinia suggest, that either this, or any other bird, had such a property. Sparman says it was not known to any inhabitant of the Cape, no more than that of the Moroc was in Abyssinia: It was a secret of nature, hid from all but these two great men, and I most willingly leave it among the catalogue of their particular discoveries.

I have only to add, that though Dr Sparman and his learned associates, that feed upon the crumbs from other peoples tables, may call this bird a cuckoo, still I hope he will not insist upon correcting my mistake, as in the article of the fennec, by ignorantly tacking it to some idle fable of his own, that he may name it Cuculus Indicator.

SHEREGRIG.

This bird is one of those called Rollier in French and in English, without either nation being able to say what is its signification in either language. In the French it is the name of a tribe, always as ill delineated as it is described; because scarcely ever seen by those that either describe or delineate it. In Latin it is called Merops. Its true name, in its native country, is Sheregrig, and by this name it is known in Syria and Arabia, and in the low country of Abyssinia, on the borders of Sennaar, wherever there are meadows or long grass, interspersed with lofty and shady trees.

There are two different kinds of this bird in Syria, considerably varying in colours, the brown of the back being considerably darker in that of the Syriac, and the blue much deeper, chiefly on its wings; the back of the head likewise brown, with very little pale-blue throughout any part of it, and wanting the two long feathers in the tail. It is a fly-catcher, or bee-eater; of which these long feathers are the mark. It is said by Dr Shaw, and writers that have described it, to be of the size of the jay, to which, indeed, the Syrian bird approaches; but this before us seems the least of his kind, and weighs half an ounce more than a blackbird. It is consequently true, as Dr Shaw says, that it has a smaller bill than a jay; because the bird itself is smaller, neither is there any disproportion in the length of its legs. Shaw says it is called Shagarag, which he imagines, by a transmutation of letters, to be the same with Sharakrak of the Talmudists, or Shakarak of the Arabian authors, and is derived from sharak, to shriek or squall.

But all this learning is very much misplaced; for from the brightness of the colour, it is derived from a word which signifies to shine. Its belly and inside of its wings are of a most beautiful pale blue. The shoulder, or top of its wings, a dark blue. The middle of the wing is traversed by a band of light blue; the extremity of the wing, and the largest feathers, are of a dark-blue. The two feathers of its tail, where broad, are of a light blue, but the long sharp single ones are of a dark blue, like the tips of the wings. Its bill is strong and well made, and has a pencil of hairs as whiskers. Round where the beak joins the head, the feathers are white; the eye black, and well-proportioned, surrounded by a light flame-coloured iris. The back is of a very light brown, inclining to cream colour, and of a cast of red. The feet are flesh-coloured and scaly, has three toes before and one behind, each with a sharp claw.

Notwithstanding what has been said as to the derivation of its name, I never heard it scream or make any sort of noise. It has nothing of the actions of either the magpie or the jay. Buxtorf interprets the sheregrig by merops, the bee-eater; and in so doing he is right, when he applies it to this bird: but then he errs, in mistaking another bird for it, called Sirens, a fly-catcher, very common in the Levant, which appear in great numbers, making a shrill, squalling noise in the heat of the day; and of these I have seen, and designed many different sorts, some very beautiful; but they fly in flocks, which the sheregrig does not: he attaches himself equally to swarms of bees and flies, which he finds in the woods upon the trees, or in holes in the ground among the high grass. Of these there are great swarms, of different kinds, in the low part of Abyssinia.

The Count de Buffon has published two figures of this bird; one from a specimen I gave him from Abyssinia *, the other from one stuffed, which he received from Senegal †; so that we know the bird possesses the whole breadth of Africa nearly on a parallel. I may be allowed to say, that when I gave him mine, I did not expect he would so far have anticipated my publication, as to have exhibited it as a part of the king's cabinet, till he had heard my idea of it, and what further I could relate of its history more than he had learned from seeing the feathers of it only. When I saw the draft, it put me in mind of the witty poem of Martial: A man had stolen some of his verses, but read them so ill, that the poet could not understand them well enough to know they were his own—

Sed male dum recitas incipit esse tuum

The bird is so ill designed, that it may pass for a different species. It is too short in the body; too thick; its neck too short and thick; its legs, the pupil and iris of the eye, of a wrong colour; its tail affectedly spread. These are the consequences of drawing from stuffed subjects. The brown upon the back is too dark, the light blue too pale, with too much white upon the side of its head. These are the consequences of having a bad painter; and the reader, by comparing my figure with those drawn by Martinet in Buffon, may easily perceive how very little chance he has to form a true idea of any of these birds, if the difference is as great between his other drawings and the original, as between my drawing and his. De Seve would have given it a juster picture.

* Buffon, Plan. Enlum. 626.
† Buffon, Plan. Enlum. 740.

WAALIA.

This pigeon, called Waalia, frequents the low parts of Abyssinia, where it perches upon the highest trees, and sits quietly in the shade during the heat of the day, so that it is difficult to discover it, unless it has been seen to alight. They likewise fly extremely high, in great flocks, and, for the most part, affect a species of the beech tree, upon the mast or fruit of which they seem chiefly to live for food. They are rarely seen in the mountainous part of the country, unless in their passage; for in the beginning of the rainy season, in the Kolla, they emigrate to the south and south-west. In this direction they are seen flying for days together. It is supposed the high country, even in the fair season, is too cold for them; and their seeking another habitation towards the Atlantic Ocean, where it is warm, and where the rains do not fall so copiously in that season as they do in the Kolla in Abyssinia, makes this conjecture still more probable.

They perch, for the most part, upon the tops of trees, beyond the sphere of the action of Abyssinian powder; but they sit so close together, that I have sometimes shot six or more at the discharge of a single barrel. The rest immediately plunge down almost to touch you, apparently ignorant whence so unaccustomed a sound comes; there, if you are a good marksman, and alert, you have another chance, though but a short one; for they immediately tower to an immoderate height, and never alight in sight, unless they are wounded. They are exceedingly fat, and by far the best of all pigeons; when they fall from a height,

without life, upon their back, I have known the flesh on each side of their breast-bone separated by the concussion, and the fat upon their rump bruised like the pulp of an orange.

Although this is undoubtedly a pigeon, the Abyssinians do not eat it; nay, after it is dead they will not touch it, for fear of defiling themselves, any more than they would do a dead horse. The Waalia is less than the common blue pigeon, but larger than the turtle-dove. Its whole back, and some of the short feathers of its wings, are of a beautiful unvarnished green, lighter and livelier than an olive. Its head and neck are of a deader green, with still less lustre. Its beak is of a bluish white, with large nostrils; the eye black, with an iris of dark orange. The pinion, or top of its wing, is a beautiful pompadour. The large feathers of the wing are black; the outer edge of the wing narrowly marked with white; the tale of a pale dirty blue; below the tail it is spotted with brown and white. Its thighs are white, with small spots of brown; its belly a lively yellow. Its legs and feet are a yellowish brown. Its feet stronger and larger than is generally found in this kind of bird. I never heard it coo, or make any noise. I killed this, and many others, in our road to Tcherkin. In M. de Buffon's collection I see a bird resembling this, coming from the west of Africa, as I remember; but his birds in general are so very ill-drawn, and his coloured ones so shamefully daubed, that nothing certain can be founded upon resemblance.

TSALTSALYA, or FLY.

The insect which we have here before us is a proof how fallacious it is to judge by appearances. If we consider its small size, its weakness, want of variety or beauty, nothing in the creation is more contemptible and insignificant. Yet, passing from these to his history, and to the account of his powers, we must confess the very great injustice we do him from want of consideration. We are obliged, with the greatest surprise, to acknowledge, that those huge animals, the elephant, the rhinoceros, the lion, and the tiger, inhabiting the same woods, are still vastly his inferiors; and that the appearance of this small insect, nay, his very sound, though he is not seen, occasions more trepidation, movement, and disorder, both in the human and brute creation, than would whole herds of these monstrous animals collected together, though their number was in a tenfold proportion greater than it really is.

The necessity of keeping my narrative clear and intelligible as I proceeded, has made me anticipate the principal particularities relating to this insect. His operations are too materially interwoven with the history of this country, to be left apart as an episode. The reader will find the * description of its manners in that part of my history which treats of the Shep-

* Vol. II. Book ii.

herds, and in several places throughout the narrative he will meet with accounts of the consequences of its wonderful influence. Providence, from the beginning, it would seem, had fixed its habitation to one species of soil, being a black fat earth, extraordinary fruitful; and, small and inconsiderable as it was, it seems from the first to have given law to the settlement of the country. It prohibited absolutely those inhabitants of the fat earth, called Mazaga, domiciled in caves and mountains, from enjoying the help or labour of any beasts of carriage. It deprived them of their flesh and milk for food, and gave rise to another nation, whose manners were just the reverse of the first. These were the Shepherds, leading a wandering life, and preserving their immense herds of cattle by conducting them into the sands beyond the limits of the black earth, and bringing them back again when the danger from this insect was over.

We cannot read the history of the plagues which God brought upon Pharaoh by the hands of Moses, without stopping a moment to consider a singularity, a very principal one, which attended this plague of the fly. It was not till this time, and by means of this insect, that God said, he would separate his people from the Egyptians. And it would seem, that then a law was given to them, that fixed the limits of their habitation. It is well known, as I have repeatedly said, that the land of Goshen, or Geshen, the possession of the Israelites, was a land of pasture, which was not tilled or sown, because it was not overflowed by the Nile. But the land overflowed by the Nile was the black earth of the valley of Egypt, and it was here that God confined the flies; for he says, it shall be a sign of this separation of the people, which he had then made, that not one fly should be seen in the sand or pasture ground, the land of Goshen; and this kind of

soil has ever since been the refuge of all cattle emigrating from the black earth to the lower part of Atbara. Isaiah, indeed, says, that the fly shall be in all the desert places, and consequently the sands; yet this was a particular dispensation of Providence, to answer a special end, the desolation of Egypt, and was not a repeal of the general law, but a confirmation of it; it was an exception, for a particular purpose, and a limited time.

I have already said so much of this insect, that it would be tiring my reader's patience to repeat any thing concerning it. I shall therefore content myself, by giving a very accurate design of him; only observing, that, for distinctness sake, I have magnified him about twice the natural size. He has no sting, though he seems to me to be rather of the bee kind; but his motion is more rapid and sudden than that of the bee, and resembles that of the gad-fly in England. There is something particular in the sound, or buzzing of this insect. It is a jarring noise, together with a humming; which induces me to believe it proceeds, at least in part, from a vibration made with the three hairs at his snout.

The Chaldee version is content with calling this animal simply Zebub, which signifies the fly in general, as we express it in English. The Arabs call it Zimb in their translation, which has the same general signification. The Ethiopic translation calls it Tsaltsalya, which is the true name of this particular fly in Geez, and was the same in Hebrew.

The Greeks have called this species of fly Cynomya, which signifies the dog-fly; in imitation of which, those, I suppose, of the church of Alexandria, that, after the coming of Frumentius, were correcting the Greek copy, and making it conformable to the Septuagint, have called this fly Tsaltsalya Kelb, to answer

the word Cynomya, which is dog-fly. But this, at first sight, is a corruption, apparently the language of strangers, and is not Ethiopic. It is the same as if we were to couple the two nominative substantives Canis and Musca, to translate Cynomya. Canis is indeed a dog, and Musca is a fly; but these two words together, as I have now wrote them, could never be brought to signify dog-fly. It is the same in the Ethiopic, where Tsaltsalya alone signifies dog-fly, without the addition of any other word whatever. What is the derivation of this is doubtful, because there are several words, both in the Ethiopic and Hebrew, that are exceedingly apposite and probable. Salal, in the Hebrew, signifies to buzz, or to hum, and as it were alludes to the noise with which this animal terrifies the cattle; and Tsaltsalya seems to come from this, by only doubling the radicals. t'Tsalalou, in Amharic, signifies to pierce with violence; from this is derived Tsalatie, the name of a javelin with a round point, made to enter the rings of a coat of mail, which, by its structure is impervious to the round cutting points of the ordinary lance or javelin. In the book of Job * this seems to mean a trident, or fishing-spear, and is vaguely enough translated Habergeon in the English copy. I do not know that this insect, however, remarkable for its activity and numbers, has ever before been described or delineated †.

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* Chap. xli. ver. 26.

† The name of this fly is undoubtedly derived from a word signifying to buzz, in Hebrew and Ethiopic. The drawing seems to have been made from a preserved subject; an eminent naturalist (the late Professor Walker) having observed that some of the finer parts are wanting in it. These may have been lost in keeping, or during the drawing of it at home.—E.

EL ADDA.

There is no genus of quadrupeds that I have known in the east, so very numerous as that of the lizard, or of which there are so many varieties. The eastern, or desert parts of Syria, bordering upon Arabia Deserta, which still have moisture sufficient, abound with them, beyond a possibility of counting them. I am positive that I can say, without exaggeration, that the number I saw one day in the great court of the Temple of the Sun at Baalbec, amounted to many thousands; the ground, the walls and stones of the ruined buildings, were covered with them; and the various colours of which they consisted made a very extraordinary appearance, glittering under the sun, in which they lay sleeping, or basking. It was in vain, in a place so full of wonders as Baalbec, to think of spending time in designing lizards. I contented myself with collecting and preserving those I could catch entire, many of which have perished by the accidents of the journey, though some of very great beauty have escaped, and are in my collection in great preservation.

As I went eastward towards the Desert, the number of this animal decreased, I suppose, from a scarcity of water; for example, at Palmyra, though there were ruins of ancient buildings, and great solitude, as at Baalbec, the lizards were few, all of the colour of the ground, without beauty or variety, and seemingly degenerated in point of size.

The Arabian naturalists and physicians were better acquainted with the different species of this animal than any philosophers have been since, and in all probabi-

lity than any strangers will ever be; they lived among them, and had an opportunity of discovering their manners, and every detail of their private economy. Happy, if succeeding the Greeks in these studies, they had not too frequently left observation to deviate into fable. The field, too, which these various species inhabit, is a very extensive one, and comprehends all Asia and Africa, that is, great portion of the old world, every part of which is, from various causes, more inaccessible at this day, than after the Arabian conquest. It is from the Arabian books, then, that we are to study with attention the descriptions given of the animals of the country. But very great difficulties occur in the course of these disquisitions. The books that contain them are still extant, and all the animals likewise exist as before; but, unfortunately the Hebrew, the Syriac, and the Arabic, are languages very ambiguous and equivocal, and use terms too loose and vague for modern accuracy and precise description, and especially in that of colours; besides, that unbounded liberty of transposition of letters, and syllables of words, in which the writers of those languages have indulged themselves, from notions of elegance, seem to require, not only a very skilful and attentive, but also a judicious and sober-minded reader, that does not run away with whimsical, or first conceptions, but weighs the character of his author, the common idioms of language which he uses, and opportunities of information that he had concerning the subjects upon which he wrote, in preference to others that may have treated the same, but who differ from them in facts.

The small lizard here described is a native of Atbara, beyond the rains, in that situation where we have said the island and city of Meroe formerly were. It seemed also to be well known by the different black

inhabitants that came from the westward by the great caravan which crossed the Desert north of the Niger, and is called the caravan of Sudan, of which I have often spoken, as being the only barbarians who seem to pay the least attention to any articles of natural history. These bring to Cairo, and to Mecca, multitudes of green paroquets, monkeys, weasels, mice, lizards, and serpents, for the diversion and curiosity of the men of note in Arabia, or of the Beys and the women of the great at Cairo. This lizard is called El Adda; it burrows in the sand, and performs this operation so quickly, that it is out of sight in an instant, and appears rather to have found a hole, than to have made one; yet it comes out often in the heat of the day, and basks itself in the sun; and if not very much frightened, will take refuge behind stones, or in the withered, ragged roots of the absinthium, dried in the sun to nearly its own colour.

Almost the whole of this large tribe of lizards is, by the Arabians, described as poisonous. Experiment has detected the falsehood of this, in very many species. The same idea has led them to attribute to them medicinal virtues in the same proportion, and, I am apt to believe, with nearly as little reason; at least, though the books prescribing them are in every body's hands, the remedy is not now made use of in the places where those books were wrote; and this affords a strong proof that the medicine was never very efficacious.

The El Adda is one of the few which the Arabs in all times have believed to be free of poisonous qualities, and yet to have all the medicinal virtues that they have so abundantly lavished upon the more noxious species. It has been reputed to be a cure for that most terrible of all diseases, the elephantiasis; yet this distemper is not, that I know, in the hotter parts

of Africa, and certainly this lizard is not an inhabitant of the higher or colder parts of Abyssinia, which we may call exclusively the domicil of the elephantiasis. It is likewise thought to be efficacious in cleansing the skin of the body, or face, from cutaneous eruptions, of which the inhabitants of this part of Africa are much more afraid than they are of the plague; it is also used against films, and suffusions on the eyes. I never did try the effect of any of these, but give their history solely upon the authority of the Arabian authors.

I have drawn it here of its natural size, which is six inches and one-sixth. Though its legs are very long, it does not make use of them to stand upright, but creeps with its belly almost close to the ground. It runs, however, with very great velocity. It is very long from its shoulder to its nose, being nearly two inches. Its body is round, having scarce any flatness in its belly. Its tail, too, is perfectly round, having no flatness in its lower part. It is exceedingly sharp-pointed, and very easily broke; yet I have seen several, where the part broke off has been renewed so as to make the loss scarcely discernible. It is the same length, two inches and one sixth, between the point of the tail and the joint of the hinder leg, as between the nose and the shoulder of the fore leg. Its forehead from the occiput is flat, its shape conical, not pointed, but rounded at the end in the shape of some shovels or spades. The head is darker than the body, the occiput darker still; its face is covered with fine black lines, which cross one another at right angles, like a net. Its eyes are small, defended with a number of strong black hairs for eye-lashes. Its upper jaw is longer, and projects considerably over the under; both its jaws have a number of short, fine, but very feeble teeth, and when holding it in my hand, though

it struggled violently to get loose, it never attempted to make use of its teeth; indeed it seems to turn its neck with great difficulty. Its ears are large, open, and nearly round. Its body is a light yellow, bordering on a straw colour, crossed with eight bands of black, almost equally distant, except the two next the tail. All these decrease both in breadth and length from the middle, towards each extremity of the animal. The scales are largest along the back; they are very close, though the divisions are sufficiently apparent. Their surface is very polished, and seems as if varnished over. Its legs, from the shoulder to the middle toe, are nearly an inch and three quarters long; its feet are composed of five toes; the extremity of each is armed with a brown claw of no great strength, whose end is tipt with black.

I have heard some of the common people call this lizard Dhab: This we are to look upon as an instance of ignorance in the vulgar, rather than the opinion of a naturalist well informed; for the Dhab is a species perfectly well known to be different from this, and is frequently met with in the deserts which surround Cairo.

CERASTES, OR HORNED VIPER.

THERE is no article of natural history the ancients have dwelt on more than that of the viper, whether poets, physicians, or historians. All have enlarged

upon the particular sizes, colours, and qualities, yet the knowledge of their manners is but little extended. Almost every author that has treated of them, if he has advanced some truths which he has left slenderly established by proof or experiment, by way of compensation, has added as many falsehoods so strongly asserted, that they have occasioned more doubt than the others have brought of light, certainty, and conviction.

Lucan, in Cato's march through the desert of the Cyrenaicum in search of Juba, gives such a catalogue of these venomous animals, that we cannot wonder, as he insinuates, that great part of the Roman army was destroyed by them. Yet I will not scruple to aver this is mere fable. I have travelled across the Cyrenaicum in all its directions, and never saw but one species of viper, which was the Cerastes, or Horned Viper, now before us. Neither did I ever see any of the snake-kind that could be mistaken for the viper. I apprehend the snake cannot subsist without water, as the cerastes, from the places in which he is found, seems assuredly to do. Indeed, those that Lucan speaks of must have been all vipers, because the mention of every one of their names is followed by the death of a man.

There are no serpents of any kind in Upper Abyssinia, that ever I saw, and no remarkable varieties even in the Low, excepting the large snake called the Boa, which is often above twenty feet in length, and as thick as an ordinary man's thigh. He is a beast of prey, feeds upon antelopes, and the deer kind, which, having no canine teeth, consequently no poison, he swallows whole, after having broken all its bones in pieces, and drawn it into a length to be more easily mastered. His chief residence is by the grassy pools of rivers that are stagnant. Notwithstanding which, we hear of the Monk Gregory telling M. Ludolf, that serpents

were so frequent in Abyssinia, that every man carried with him a stick, bent in a particular manner, for the more commodiously killing these creatures, and this M. Ludolf recommends as a discovery. And Jerome Lobo, among the rest of his fables, has some on this subject likewise. A cold and rainy country can never be a habitation for vipers. We see, on the contrary, that their favourite choice are deserts and burning sand, without verdure, and without any moisture whatever.

The very learned, though too credulous, Prosper Alpinus, says, that many have assured him, that near the lakes contiguous to the sources of the Nile, there is a number of basilisks, about a palm in length, and the thickness of a middle finger; that they have two large scales, which they use as wings, and crests and combs upon their head, from which they are called basilisci, or reguli, that is, crowned, crested, or kingly serpents; and he says that no person can approach these lakes without being destroyed by these crested snakes *.

With all submission to this naturalist's relation, I should imagine he could not have heard the description of these lakes from many travellers, if all those that approached them were killed by the basilisks. I shall only answer for this, that having examined the Lake Gooderoo, those of Court Ohha, and Tzana, the only lakes near the sources of the Nile, I never yet saw one serpent there, whether crowned or uncrowned; nor did I ever hear of any; and therefore believe this account as fabulous as that of the acontia and other animals he speaks of in this whole chapter †.

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* This account of snakes near the sources of the Nile, was taken, by Prosper Alpinus, from the Arabian geographers, who all mention the abundance of these in the Jibbel Kumr, or mountains of the moon. For further observations on this, see the dissertation on the White River in this volume.—E.

† Prosp. Alpin. lib. iv. cap. 4.

The basilisk is a species of serpent, frequently made mention of in Scripture, though never described, farther than that he cannot be charmed so as to do no hurt, nor trained so as to delight in music; which all travellers, who have been in Egypt, know is exceedingly possible, and frequently seen. "For, behold, I will send basilisks among you," saith the Scripture, "which will not be charmed, and they shall bite you saith the Lord *." And "Thou shalt tread upon the lion and the basilisk †," &c. ‡.

I shall mention one name more, under which the Cerastes goes, because it is equivocal, and has been misunderstood in Scripture, that is Tseboa, which name is given it in the Hebrew, from its different colours and spots. And hence the Greeks || have called it by the name of Hyæna, because it is of the same reddish colour, marked with black spots, as that quadruped is. And the same fable is applied to the serpent and quadruped, that they change their sex yearly.

Some philosophers, from particular system, have judged, by a certain disposition of this animal's scales, that it is what they term Coluber; while others, from some arrangement of the scales of its tail, will

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* Jerem. chap. viii. ver. 17.

† Psalm ix. ver. 13.

‡ It is to be observed here, that it is the Greek text that calls it Basilisk. The Hebrew, for the most part, calls it Tsepha, which is a species of serpents real and known. Our English translation, very improperly renders it cockatrice; a fabulous animal, that never did exist. I shall only further observe, that the basilisk, in Scripture, would seem to be a snake, not a viper, as there is frequent mention made of their eggs, as in Isaiah, chap. lix. ver. 5, whereas, it is known to be the characteristic of the viper to bring forth living young.

|| Elian. Hist. lib. i. cap. 25. Hori. Hieroglyph. lib. ii. cap. 65.

have it to be what they call Boa. I enter not into the dispute; it is here as faithfully represented as the size will permit; only I shall observe, that, unless Boa mean something more than I know it does, the name is ill chosen when applied to any species of poisonous serpents, because it is already the proper name of the large snake, just mentioned, that has no poison. Pliny and Galen say, that the young vipers are so fierce as to become parricides, and destroy their mother upon their birth. But this is surely one of the ill-grounded fancies these authors have adopted. The cerastes is mentioned by name in Lucan; and, without warranting the separate existence of any of the rest, I can see several that are but the Cerastes under another term. The Thebanus ophites, the ammodytes, the torrida dipsas, and the prester *, all of them are but this viper, described from the form of its parts, or its colours. Cato must have been marching in the night, when he met this army of serpents. The cerastes hides itself all day in holes in the sand, where it lives in contiguous and similar houses to those of the jerboa; and I have already said, that I never but once found any animal in this viper's belly, one jerboa in a gravid female cerastes.

I kept two of these last-mentioned creatures in a glass jar, such as is used for keeping sweetmeats, for two years, without having given them any food; they did not sleep, that I observed, in winter, but cast their skins the last days of April.

The cerastes moves with great rapidity, and in all directions, forwards, backwards, and sideways. When he inclines to surprise any one who is too far from him, he creeps with his side towards the person, and

* Lucan. lib. ix.

his head averted, till, judging his distance, he turns round, springs upon him, and fastens upon the part next to him; for it is not true what is said, that the cerastes does not leap or spring. I saw one of them at Cairo, in the house of Julian and Rosa, crawl up the side of a box, in which there were many, and there lie still, as if hiding himself, till one of the people who brought them to us came near him, and, though in a very disadvantageous posture, sticking as it were perpendicular to the side of the box, he leaped near the distance of three feet, and fastened between the man's forefinger and thumb, so as to bring the blood. The fellow shewed no signs either of pain or fear; and we kept him with us fully four hours, without his applying any sort of remedy, or his seeming inclined to do so.

To make myself assured that the animal was in its perfect state, I made the man hold him by the neck, so as to force him to open his mouth, and lacerate the thigh of a pelican, a bird I had tamed, as big as a swan. The bird died in about thirteen minutes, though it was apparently affected in fifty seconds; and we cannot think this was a fair trial, because a very few minutes before, it had bit the man, and so discharged part of its virus, and it was made to scratch the pelican by force, without any irritation or action of its own.

The cerastes inhabits the greatest part of the eastern continent, especially the desert sandy parts of it. It abounds in Syria, in the three Arabias, and in Africa. I never saw so many of them as in the Cyrenaicum, where the Jerboa is frequent in proportion. He is a great lover of heat; for though the sun was burning hot all day, when we made a fire at night, by digging a hole, and burning wood to charcoal in it, for dressing our victuals, it was seldom we had fewer than

half a dozen of these vipers, who burnt themselves to death approaching the embers.

I apprehend this to be the aspic, which Cleopatra employed to procure her death. Alexandria, plentifully supplied by water, must then have had fruit of all kinds in its gardens. The baskets of figs must have come from thence, and the aspic, or cerastes, that was hid in them, from the adjoining desert, where there are plenty to this day; for to the westward in Egypt, where the Nile overflows, there is no sort of serpent whatever, that I ever saw; nor, as I have before said, is there any other of the mortal kind that I know, in those parts of Africa adjoining to Egypt, excepting the cerastes.

It should seem very natural for any one, who, from motives of distress, has resolved to put a period to his existence, especially women, and weak persons unaccustomed to handle arms, to seek the gentlest method to free themselves from the load of life, now become insupportable. This, however, has not always been the case among the ancients. Aria, the wife of Paetus, stabbed herself with a dagger, to set her husband an example to die, with this memorable assurance, after giving herself the blow, "Paetus, it is not painful." Portia, the wife of Brutus, died by the barbarous, and not obvious way of swallowing fire; the violent agitation of spirits prevailing over the momentary difference in the suffering. It is not to be doubted but that a woman, high-spirited like Cleopatra, was also above the momentary differences in feeling; and, had the way in which she died been ordinary and usual, she certainly would not have applied herself to the invention of a new one. We are therefore to look upon her dying by the bite of the cerastes, as only following the manner of death

which she had seen commonly adopted by those who were intended to die without torment.

Galen, speaking of the aspic in the great city of Alexandria, says, I have seen how speedily they (the aspics) occasioned death. Whenever any person is condemned to die, whom they wish to end quickly and without torment, they put the viper to his breast, and suffering him there to creep a little, the man is presently killed. Pausanius speaks of particular serpents that were to be found in Arabia among the balsam trees, several of which I procured both alive and dead, when I brought the tree from Beder Hunein; but they were still the same species of serpent, only some from sex, and some from want of age, had not the horns, though in every other respect they could not be mistaken. Ibn Sina, called by Europeans Avicenna, has described this animal very exactly; he says it is frequent in Sham (that is, the country about and South of Damascus), and also in Egypt, and he makes a very good observation on their manners; that they do not go or walk straight, but move by contracting themselves. But in the latter part of his description he seems not to have known the serpent he is speaking of, because he says its bite is cured in the same manner as that of the viper and cerastes, by which it is implied, that the animal he was describing was not a cerastes, and the cerastes is not a viper, both which assertions are false.

The general size of the cerastes, from the extremity of its snout to the end of its tail, is from 13 to 14 inches*. Its head is triangular, very flat, but higher near where it joins the neck than towards the nose. The length of its head, from the point of the

* The Cerastes at Kinnaird is nearly double this in length.—E.

nose to the joining of the neck, is ten-twelfths of an inch, and the breadth nine-twelfths. Between its horns is three-twelfths. The opening of its mouth or rictus oris eight-twelfths. Its horns in length three-twelfths. Its large canine teeth something more than two-twelfths and one-half. Its neck at the joining of the head four-twelfths. The body where thickest ten-twelfths. Its tail at the joining of the body two-twelfths and one-half. The tip of the tail one-twelfth. The length of the tail one inch and three twelfths. The aperture of the eye two-twelfths, but this varies apparently according to the impression of light.

The cerastes has sixteen small immoveable teeth, and in the upper jaw two canine teeth, hollow, crooked inward, and of a remarkably fine polish, white in colour, inclining to bluish. Near one-fourth of the bottom is strongly fixed in the upper jaw, and folds back like a clasp knife, the point inclining inwards, and the greatest part of the tooth is covered with a green soft membrane, not drawn tight, but as it were wrinkled over it. Immediately above this is a slit along the back of the tooth, which ends nearly in the middle of it, where the tooth curves inwardly. From this aperture I apprehend it sheds its poison, not from the point, where, with the best glasses, I never could perceive an aperture, so that the tooth is not a tube, but hollow only half way; the point being for making the incision, and by its pressure occasioning the venom in the bag, at the bottom of the fang, to rise in the tooth, and spill itself through the slit into the wound.

By this flat position of the tooth along the jaw, and its being defended by the membrane, it eats in perfect safety; for the tooth cannot press the bag of poison at the root while it lies in this position, nor can it rise in the tube to spill itself, nor can the tooth make

any wound so as to receive it; but the animal is supposed to eat but seldom, or only when it is with young.

The viper has but one row of teeth; none but the canine are noxious. The poison is very copious for so small a creature; it is fully as large as a drop of laudanum dropt from a vial by a careful hand. Viewed through a glass, it appears not perfectly transparent or pellucid. I should imagine it has other reservoirs than the bag under the tooth, for I compelled it to scratch eighteen pigeons upon the thigh as quick as possible, and they all died nearly in the same interval of time; but I confess the danger attending the dissection of the head of this creature made me so cautious, that any observation I should make upon these parts would be less to be depended upon.

People have doubted whether or not this yellow liquor is the poison, and the reason has been, that animals, who had tasted it did not die as when bitten; but this reason does not hold in modern physics. We know why the saliva of a mad dog has been given to animals, and has not affected them; and a German physician was bold enough to distil the pus, or putrid matter, flowing from the ulcer of a person infected by the plague, and taste it afterwards without bad consequences; so that it is clear the poison has no activity, till through some sore or wound, it is admitted into circulation. Again, the tooth itself, divested of that poison, has as little effect. The viper, deprived of his canine teeth, an operation very easily performed, bites without any fatal consequence with the others; and many instances there have been of mad dogs having bit people cloathed in coarse woollen stuff, which had so far cleaned the teeth of the saliva in passing through it, as not to have left the smallest inflammation after the wound.

I forbear to fatigue the reader by longer insisting upon this subject. A long dissertation would remain upon the incantation of serpents. There is no doubt of its reality. The Scriptures are full of it. All that have been in Egypt have seen as many different instances as they chose. Some have thought that it was a trick, and that the animals so handled had been first trained, and then disarmed of their power of hurting; and fond of the discovery, they have rested themselves upon it, without experiment, in the face of all antiquity. But I will not hesitate to aver, that I have seen at Cairo (and this may be seen daily without trouble or expence) a man who came from above the catacombs, where the pits of the mummy birds are kept, who has taken a cerastes with his naked hand from a number of others lying at the bottom of the tub, has put it upon his bare head, covered it with the common red cap he wears, then taken it out, put it in his breast, and tied it about his neck like a necklace; after which it has been applied to a hen, and bit it, which has died in a few minutes; and to complete the experiment, the man has taken it by the neck, and beginning at its tail, has eat it as one would do a carrot or a stock of celery, without any seeming repugnance.

We know from history, that where any country has been remarkably infested with serpents, there the people have been screened by this secret. The Psyli and Marmarides of old undoubtedly were defended in this manner,

> Ad quorem cantus mites jacuêre Cerastæ.
> SIL. ITAL. lib. iii.

To leave ancient history, I can myself vouch, that all the black people in the kingdom of Sennaar,

whether Funge or Nuba, are perfectly armed against the bite of either scorpion or viper. They take the cerastes in their hands at all times, put them in their bosoms, and throw them to one another as children do apples or balls, without having irritated them, by this usage, so much as to bite. The Arabs there have not this secret naturally, but from their infancy they acquire an exemption from the mortal consequences attending the bite of these animals, by chewing a certain root, and washing themselves (it is not anointing) with an infusion of certain plants in water.

One day when I was with the brother of Shekh Adelan, prime minister of Sennaar, a slave of his brought a cerastes which he had just then taken out of a hole, and was using it with every sort of familiarity. I told him my suspicion that the teeth had been drawn, but he assured me they were not, as did his master Kittou, who took it from him, wound it round his arm, and at my desire ordered the servant to carry it home with me. I took a chicken by the neck, and made it flutter before him; his seeming indifference left him, and he bit it with great signs of anger, the chicken died almost immediately. I say his seeming indifference; for I constantly observed that however lively the viper was before, upon being seized by any of these barbarians, he seemed as if taken with sickness and feebleness, frequently shut his eyes, and never turned his mouth towards the arm of the person that held him. I asked Kittou how they came to be exempted from this mischief? he said, they were born so, and so said the grave and respectable men among them. Many of the lighter and lower sort talked of enchantments by words and by writing; but they all knew how to prepare any person by medicines, which were decoctions of herbs and roots.

I have seen many thus armed for a season do pretty much the same feats as those that possessed the exemption naturally. The drugs were given me, and I several times armed myself, as I thought, resolved to try the experiment, but my heart always failed me when I came to the trial; because among these wretched people it was a pretence they might very probably have sheltered themselves under, that I was a Christian, that therefore it had no effect upon me. I have still remaining by me a small quantity of this root, but never had an opportunity of trying the experiment.

The reader will attend to the horn which is placed over the eye in the manner I have given the figure of it; it is fluted, and has four divisions. He will likewise observe the tooth is viewed through a glass. He may suppose the black represents a painter's pallet, for the easier discerning the white tooth, which could not otherwise appear distinctly upon the white paper.

BINNY.

ALTHOUGH the fish we find in the east are generally more distinguished for their beauty and variety of colours, or for their uncouth forms, than for the goodness of the fish itself, this before us appears to be an exception. Though it is not without singularities, yet its form and colour are very simple: and, for the elegance of its taste, may vie with any fish caught in any river which runs either into the Mediterranean or Ocean. Whether it is the Latus, or the Oxyrinchus of antiquity, both fishes of the Nile, so famous that divine honours were paid them, by large cities, nomes, or districts situated upon that river, is what I am not naturalist enough to discover. Such as it is, in all its parts, I have placed it before the reader faithfully.

By the disproportion in the length of its jaws, I should imagine this to be a fish of prey; though a circumstance concerning the bait with which it is taken seems to contradict this. The fish from which this drawing was made weighed 32 pounds English, but is often caught of 70 pounds and upwards as I have been told by the fishermen; for I never saw one larger than the one I am now describing. The largest of this kind are caught about Rosetto, and the mouth of the river; but they are very numerous higher up as far as Syene and the first cataract. This was caught at Achmim, the ancient Panopolis; and the manner in

which this is performed is very uncommon and ingenious, and by the few trials that I saw is also very successful.

They take a quantity of oil, clay, flour, and honey, with straw, and some other thing that makes it stick together; they knead or tread it with their feet till it be perfectly mixed. They then take two handfuls of dates, and break them into small pieces about the bigness of the point of the finger, and stick them in different parts of this mixture, which begins now to have such consistency as to adhere perfectly together, and appears in form like a Cheshire cheese. In the heart of this cake they put seven or eight hooks, with dates upon them, and a string of strong whip-cord to each. The fisherman then takes this large mass of paste, and putting it upon a goat's skin blown with wind, rides behind it out into the middle of the stream; there he drops it in the deepest part of the river, then cautiously holding the ends of each of the strings slack, so as not to pull the dates and the hooks out of the heart of the composition, he gets again ashore upon his skin a little below where he had sunk the solid mass.

When arrived on the shore, he carefully separates the ends of the strings, and ties them, without straining, each to a palm branch made fast on shore, to the end of every one of which hangs a small bell. He then goes and feeds his cattle, digs ditches, or lies down and sleeps, as his business calls him. The oil resists the water for some time, at last the cake begins to dissolve, pieces fall off, the broken dates dipped in the honey flow down the stream, and the large fish below catch ravenously at them as they pass. The fish follow these pieces up the stream, gathering them as they go along till they get to the cake at last, when altogether, as many as are as-

sembled, fall voraciously to seek the dates buried in the composition; each fish that finds a date swallows it, together with an iron hook, and feeling himself fast, makes off as speedily as possible; the consequence is, endeavouring to escape from the line by which he is fastened, he pulls the palm branch, and rings the bell fastened to it.

The fisherman runs immediately to the bell, and finding thereby the particular line, hauls his prisoner in, but does not kill him; the hook being large, it generally catches him by the upper jaw, which is considerably longer than the under. He then pulls him out of the water, and puts a strong iron ring through his jaw, ties a few yards of cord to it, and fastens him to the shore; so he does with the rest. Very rarely one hook is found empty. Those that want fish at Girge, a large town opposite, or at Achmim itself, come thither as to a fish-market, and every man takes the quantity he wants, buying them alive. Fish when dead do not keep here, which makes that precaution necessary. We bought two, which fully dined our whole boat's crew; the fisherman had then ten or twelve fastened to the shore, all of which he pulled out and shewed us.

I imagine that this is the fish which Mr Norden says the Kennouss caught at Syene, and which he calls a Carp; but, as I have already observed, streams are not the haunt of leather-mouthed, or sucking fish, as is the carp, but rather of such as are powerfully furnished with fins, as this is, to struggle with, and traverse the current in all its directions. I believe the carp to be a fish of northern climates; I have never even seen them in these; they are certainly not in Ethiopia, whence the Nile comes; their name, Cyprinus, seem to indicate they belong to Greece. They

are found in the island of Cyprus; but whether exclusively from the rest of the islands, is what I cannot determine.

This fish has two fins upon its back; the first has a sharp short thorn before it, and is composed of seven longer ones, sharp-pointed, but much weaker in shape, resembling the latine sail of a boat. The one behind it is composed of eleven small pliable bones, but not armed with any defence. The belly has two fins, made of pliable unarmed bones likewise; and on its side, near the gills, it has two others of the same kind. The tail is forked into two sharp thin narrow divisions, that below are considerably shorter than above. Below its throat is a parcel of long bones, hanging down like a beard, which grow longer as they approach the tail, the last being the largest of all.

The whole body of this fish is covered with silver scales, much resembling silver spangles; they lie close together. There is no variety of colour upon the whole fish, excepting a shade of red upon the end of the nose, which is fat and fleshy. His eye is large and black, with a broad iris of white, stained with yellow. It has a number of small teeth, very sharp and closely set. Nature has probably given him this quantity of fins, to save him from the crocodile, whom by his size he seems destined to feed.

CARETTA, OR SEA-TORTOISE.

AMONG the natural productions of the Red Sea, which either have been or are at present articles of commerce, I shall just speak a little of that species of the testudo, or tortoise, called the Caretta, or Hawk's-bill. It is greatly inferior in size to the West Indian or American sea-tortoise. The extreme length of the shell of this was three feet seven inches, which was esteemed a large one. Simple as it is, I do not know one good figure of it. This which I have submitted to the reader may be depended upon for its exactness; otherwise, the animal is well known, and has often been described.

Its back is covered like the rest of other turtles, with a bony substance, and this again is covered by lamina, or scales of a thin transparent texture, variegated with dark brown streaks, disposed in each scale as radii proceeding from a centre. The outer rows of the great scales are irregular pentagons. The row that runs down the middle between these are regular hexagons; and round the whole circumference, the large scales are inclosed by a kind of quadrangular frame, firmly united; the broadest and largest of these scales being nearest the tail. The lowest of all, as it were in the centre of the lowest part of the figure, is notched; the centre of this division answering to a line drawn through the middle of the oval, and the head or occiput.

This fish lays a multitude of eggs. Some have said that these are laid among stones, contrary to the practice of the large sea-turtle, which lays them upon sand.

All I can say to this is, that I have seen them but seldom, and always upon sand, but never among stones. The fish itself is a very dry and coarse food, very different from that delicate species which comes from the West Indies, if the difference does not lie a great deal in the cookery. At the time that I ate of this animal, I was going to view the junction of the Indian Ocean without the Straits of Babelmandeb; and the wind setting in contrary, we were in great fear of not being able to return, as the reader will have seen in our voyage. In particular, I did not observe any of the green fat, so well known to our epicures, nor indeed any fat at all. When roasted, it tasted to me much like old veal new killed. It is only an inhabitant of the mouth of the Gulf. They seldom come up the length of Mocha; when they do they are few in number, are probably sick, and not able to bear the agitation of the waves from the south-westers.

The Egyptians dealt largely with Rome in this elegant article of commerce. Pliny tells us, the cuting them for fineering, or inlaying, was first practised by Carvilius Pollio, from which we would presume that the Romans were ignorant of the Arabian and Egyptian art of separating the lamina by fire, placed in the inside of the shell when the meat is taken out; for these scales, though they appear perfectly distinct and separate, do yet adhere, and oftener break than split where the mark of separation may be seen distinct. Martial says *, that beds were inlaid with it. Juvenal †, and Apuleius, in his tenth book, mentions, that the Indian bed was all over shining with tortoise-shell in the outside, and swelling with stuffing of down

* Mart. lib. xii. and lxvii. epig.
† Juv. Sat. xi.

within. The immense use made of it in Rome may be guessed by what we learn from Velleius Paterculus *, who says, that when Alexandria was taken by Julius Cæsar, the magazines, or ware-houses, were so full of this article, that he proposed to have made it the principal ornament of his triumph, as he did ivory afterwards, when triumphing for having happily finished the African war.

This, too, in more modern times, was a great article in the trade to China; and I have always been exceedingly surprised, since near the whole of the Arabian Gulf is comprehended in the charter of the East India Company, that they do not make an experiment of fishing both pearls and tortoises; the former of which, so long abandoned, must now be in great plenty and excellence; and a few fishers put on board each ship trading to Jidda, might surely find very lucrative employment with a long-boat, or pinnace, at the time the vessels were selling their cargo in the port; and while busied in this gainful occupation, the coasts of the Red Sea might be fully explored.

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* Vell. Pat. lib. ii. cap. 56.

OF PEARLS.

The ships which navigated the Red Sea brought gold and silver from Ophir and Tarshish; myrrh, frankincense, and ivory, from Saba; and various kinds of spices from the continent of Asia, across the Indian Ocean. If we judge by the little notice taken of them in very ancient times, the treasures which lay nearer home, in their own seas and shores, were very little sought after, or spoken of, in the days when the navigation of the Arabian Gulf was at its height. We are not, however, to believe, that the pearl fishery, even in those days, was totally neglected; but foreign trade was grown to such a magnitude, and its value so immense, that we are not to be surprised, that articles that were only a matter of ornament and luxury, or of domestic use, and did not enter into the medium of commerce, were little spoken of, however closely followed, and well understood.

We gather from Scripture, the only history of these early times to be depended upon, that precious stones were imported from the southern coast of Africa. This trade, however great it might be, is mentioned but slightly, and, as it were, accidentally, being absorbed in the very great articles of commerce then spoken of. In the same manner we read of the beauty and excellence of pearls, cursorily introduced, often by allusions and comparisons throughout the sacred books, but always in a manner which sufficiently shews the great intrinsic estimation in which they were held.

Pearls are found in all the four quarters of the world, but in no degree of excellence, excepting in the east of Africa and in Asia. They are in every part of the Red Sea; they are in the Indian Ocean, in that low part of the coast of Arabia Felix called the Baherein, which joins to the Gulf of Persia. There are banks where they are found about Gombron to the eastward of that gulf, or in the flat coast there; and in the seas which wash the island of Ceylon, many have been found of the greatest beauty and price; and for number, they are nowhere so plentiful as in the Baherein, between the coast of Arabia Felix and the island of Ormus, whence they are transported to Aleppo, then sent to Leghorn, and circulated through Europe; and this, above all others, is the market for seed pearls.

The oyster is currently reported to be the species of fish where this precious guest is lodged; and many a weary search and inquiry I have made after these oysters in the Red Sea, despairing always to see a pearl, till we had first found an oyster. The fact, however turned out to be, that there are no such fish as oysters in the Arabian Gulf; and though our success in finding pearls was small, yet we got from the

natives of the coast a sufficient number, as well as information, to put it beyond doubt to what fish this beautiful and extraordinary production belonged.

Pearls are produced only in shells that are bivalves, that is, which have an upper and lower shell, closing by a hinge, in a manner little differing from the oyster. It is commonly said by the fishermen, that all bivalves in the Red Sea have pearls of some kind in them. This is a very rude and large view of the matter; for though it is true that some excrescences, or secretions, of the nature of pearls, may be found in the bisser, and the large bivalves with which this sea abounds, yet it is well known to all conversant in these matters, that many of the pearl shell itself (I shall not call it an oyster, for it is not one) are found without any pearl, or likeness of pearl, in them; being, I suppose, not yet arrived to that age when the extravasation of that juice which forms the pearl happens.

There are three shell-fish in the Red Sea, which regularly are sought after, as containing pearls. The first is a muscle; and this is of the rarest kind; whether they are now failed in number, or whether they were at any former time frequent, is now unknown. They are chiefly found in the north end of the Gulf, and on the Egyptian side. The only part where I have ever seen them was about Cosseir, and to the northward of it, where I must observe there was an ancient port, called Myos Hormos, which commentators have called the Port of the Mouse, when they should have translated it, the Harbour of the Muscle. This fish contains often pearls of great beauty for lustre and shape, but seldom of a white or clear water. Pliny relates this to be the case in the Italian seas, and also in the Thracian Bosphorus, where he observes they are more frequent.

The second sort of shell, which generally contains the pearl, is called Pinna. It is broad and semicircular at the top, and decreases till it turns sharp at the lower end, where is the hinge. It is rough and figured on the outside, of a beautiful red colour, exceedingly fragile, and sometimes three feet long. In the inside, it is clothed with a most beautiful lining, called nacre, or mother-of-pearl, white, tinged with an elegant blush of red. Of this most delicate complexion is the pearl found in this fish; so that it seems to confirm the sentiments of M. Reaumur on the formation of pearls, that they are formed of that glutinous fluid which is the first origin of the shell; that it forms the pearl of the same colour and water that is communicated to it from that part of the shell with which it is more immediately in contact, and which is generally observed in the pinna to be higher in colour as it approaches the broadest, which is the reddest end.

Upon the maturest consideration, I can have no doubt that the pearl found in this shell is the penin, or peninim rather; for it is always spoken of in the plural, to which allusion has been often made in Scripture. And this, derived from its redness, is the true reason of its name. On the contrary, the word pinna has been idly imagined to be derived from penna, a feather, as being broad and round at the top, and ending at a point, or like a quill below. The English translation of the Scripture, erroneous and inaccurate in many things more material, translates this peninim by rubies *, without any foundation or authority, but

* See Proverbs, chap. xxxi. ver. 10. But in Job, where all the variety of precious stones are mentioned, the translator is forced, as it were unwillingly, to render peninim, pearls, as he ought indeed to have done in many other places where it occurs. Job, chap. xxviii. ver 18.

because they are both red, as are bricks and tiles, and many other things of base and vile materials. The Greeks have translated it literally pina or pinna, and the shell they call pinnicus; and many places occur in Strabo, Elian, Ptolemy, and Theophrastus, which are mentioned famous for this species of pearl. I should imagine also, that by Solomon saying it is the most precious of all productions, he means, that this species of pearl was the most valued, or the best known in Judea. For though we learn from Pliny that the excellency of pearls was their whiteness, yet we know the pearls of a yellowish cast are those esteemed in India to this day, as the peninim, or reddish pearl, was in Judea in the days of Solomon.

The third sort of pearl-bearing shell is what I suppose has been called the oyster: for the two shells I have already spoken of surely bear no sort of likeness to that shell-fish, nor can this, though most approaching to it, be said any way to resemble it, as the reader will judge by a very accurate drawing given of it, now before him.

Bochart says these are called Darra, or Dora in Arabic, which seems to be the general word for all pearls in Scripture, whereas the peninim is one in particular. In the Red Sea, where it holds the first rank among pearls, it is called Lule single, or * Lulu el Berber, *i. e.* the pearl of Berber, Barabra, or Beja, the country of the Shepherds, which we have already spoken of at large, extending from the northern tropic, southward, to the country of the Shangalla or Troglodytes. Androsthenes says the ancient name of these pearls was Berberis, which he believes to be an

* Bochart reads this Lalu falsely, mistaking the vowel point *a* for *u*; but there is no such word in Arabic.

Indian word, and so it is, understanding, as the ancients did, India to mean the country I have already mentioned between the tropics.

The character of this pearl is extreme whiteness, and even in this whiteness Pliny justly says there are shades or differences. To continue to use his words, the clearest of these are found in the Red Sea; but those in India have the colour of the flakes, or divisions of the lapis specularis. The most excellent are those like a solution of alum, limpid, milky like, and even with a certain almost imperceptible cast of a fiery colour. Theophrastus says, that these pearls are transparent, as indeed the foregoing description of Pliny would lead us to imagine; but it is not so, and if they were, it is apprehended they would lose all their beauty and value, and approach too much to glass.

It has been erroneously said, that pearl shells grow upon rocks, and again, that they are caught by nets. This is certainly a contradiction, as nobody would employ nets to gather fish from among rocks. On the contrary, all kinds of pearl are found in the deepest, stillest water, and softest bottom. The parts of most of them are too fine to bear the agitation of the sea among rocks. Their manners and œconomy are little known, but, as far as I have observed, they are all stuck in the mud upright by an extremity, the muscle by one end, the pinna by the small sharp point, and the berberi, or lule, by the hinge, or square part, which projects from the round.

In shallow and clear streams I have seen small furrows, or tracts, upon the sandy bottom, by which you could trace the muscle from its last station, and these not straight, but deviating into traverses and triangles, like the course of a ship in a contrary wind laid down upon a map, the tract of the muscle probably in

pursuit of food. The general belief is, that the muscle is constantly stationary, in a state of repose, and cannot transfer itself from place to place. This is a vulgar prejudice, and one of those facts that are mistaken for want of sufficient pains, or opportunity, to make more critical observation. Others, finding the first opinion a false one, and that they are endowed with power of changing place, like other animals, have, upon the same foundation, gone into the contrary extreme, so far as to attribute swiftness to them; a property surely inconsistent with their being fixed to rocks. Pliny and Solinus say, that the muscle have leaders, and go in flocks; and that their leader is endowed with great cunning, to protect himself and his flock from the fishers, and when he is taken, the others fall an easy prey. This, however, I think, we are to look upon as a fable. Some of the most accurate observers having discovered the motion of the muscle which is, indeed, wonderful, and that they lie in beds, which is not at all so, have added the rest to make their history complete.

It is observed that pearls are always the most beautiful in those places of the sea where a quantity of fresh water falls. Thus, in the Red Sea, they were always most esteemed that were fished from Suakem southward, that is, in those parts corresponding to the country anciently called Berberia, and Azamia, from reasons before given; on the Arabian coast, near the island Camaran, where there is abundance of fresh water; and the island of Foosht, laid down in my map, where there are springs: there I purchased one I had the pleasure to see taken out of the shell. It has been said that the fish of these shells are good, which is an error; they were the only shell fish in the Red Sea I found not eatable. I never saw any pearl shells on either side southward of the parallel of Mocha,

in Arabia Felix. As it is a fish that delights in repose, I imagine it avoids this part of the gulf, as lying open to the Indian Ocean, and agitated by variable winds.

In that part of my narrative where I speak of my return through the desert of Nubia, and the shells found there, I have likewise mentioned the muscle found in the salt springs that appear in various parts of that desert. These likewise travel far from home, and are sometimes surprised by the ceasing of the rains, at a greater distance from their beds than they have strength and moisture to carry them. In many of these shells I have found those kind of excrescences which we may call Pearls, all of them ill-formed, foul, and of a bad colour, but of the same consistence, and lodged in the same part of the body as those in the sea. The muscle, too, is in every respect similar, I think larger; the outer skin, or covering of it, is of a vivid green. Upon removing this, which is the epidermis, what next appears is a beautiful pink, without gloss, and seemingly of a calcareous nature. Below this, the mother of pearl, which is undermost, is a white without lustre, partaking much of the blue, and very little of the red, and this is all the difference I observed between it and the pearl-bearing muscle in the Red Sea; but even this latter I always found in still water, soft bottom, and far from stony or rocky ground. None of these pearl muscles, either in the Red Sea or the desert, have any appearance of being spinners, as they are generally described to be.

I have said, that the Baherein has been esteemed the place whence the greatest quantity of pearls are brought. I would be understood to mean, that this has been the reputed greatest regular market from antiquity to the present time. But Vincicus, in his second navigation, says, that he found an unknown peo-

ple of that continent, who sold him above 54 pounds weight for 40 ducats *. And Peter, the Martyr, says, that Tunacca, one of the kings of that country, seeing the great desire the Spaniards had for pearls, and the value they set upon them, sent some of his own people in search of them, who, returning the fourth day, brought with them twelve pounds of pearls, each pound eight ounces. If this is the case, America surely excells both Africa and Asia in the quantity of this article.

The value of pearls depends upon size, regularity of form (for roundness is not always requisite), weight, smoothness, colour, and the different shades of that colour. Suetonius says, that Cæsar gave Servilia, the mother of Brutus, a pearl worth about L. 50,000 of our money. And Cleopatra, after vaunting to her lover, Mark Antony, that she would give him a supper, which should cost two hundred and fifty thousand pounds, for this purpose dissolved one of the pearls which she carried in her ears, amounting to that price, and drank it. The other, it is said, was carried afterwards to Rome by Augustus Cæsar, sawn in two, and put in the ears of Venus Genetrix.

The price of pearls has been always variable. Pliny seems to have rated them according to the opinion of his age, when he says they are the most valuable and excellent of all precious stones. He must probably have had those mentioned in his view, for otherwise they cannot bear comparison with diamonds, amethysts, rubies, or sapphires.

It has been observed to me by the eastern pearl

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* The Spaniards have no gold ducats, so this must have been silver, value about a crown, so that the sum total was L. 10 Sterling.

fishers, that when the shell is smooth and perfect, they have no expectation of a pearl, but are sure to find them when the shell is distorted and deformed. From this it would seem, that as the fish turned older, the vessels containing the juice for forming the shell, and keeping it in its vigour, grew weak and ruptured; and thence, from this juice accumulating in the fish, the pearl was formed, and the shell brought to decay, perfectly in the manner, as I have before said, supposed by M. Reaumur.

In Scotland, especially to the northward, in all rivers running from lakes, there are found muscles that have pearls of more than ordinary merit, though seldom of large size. I have purchased many hundreds, till lately the wearing of real pearls coming into fashion, those of Scotland have increased in price greatly beyond their value, and superior often to the price of oriental ones when bought in the East. The reason of this is a demand from London, where they are actually employed in work, and sold as oriental. But the excellency of all glass or paste manufactory, it is likely, will keep the price of this article, and the demand for it, within bounds, when every lady has it in her power to wear in her ears, for the price of sixpence, a pearl as beautiful in colour, more elegant in form, lighter and easier to carry, and as much bigger as she pleases, than the famous ones of Cleopatra and Servilia. I shall only further observe, that the same remark on the shell holds in Scotland as in the East: The smooth and perfect muscle shell rarely produces a pearl, the crooked and distorted shell seldom wants one.

I shall here mention a very elegant sort of manufactory, with which I cannot positively say the ancients were acquainted, which is fineering, or inlaying with the inside of the shell called mother-of-pearl, known

to the dealers in trinkets all over Europe, and in particular brought to great perfection at Jerusalem. That of Peninim, though the most beautiful, is too fragile and thin to be employed in large pieces. It is the nacre, or mother-of pearl taken from the Lulu el Berberi, or what is called Abyssinian oyster, principally used in those fine works. Great quantities of this shell are brought daily from the Red Sea to Jerusalem. Of these all the fine works, the crucifixes, the wafer-boxes, and the beads are made, which are sent to the Spanish dominions in the new world, and produce a return incomparably greater than the staple of the greatest manufactory in the old.

ADDITIONAL ARTICLES

OF

NATURAL HISTORY.

The multitude of beasts, birds, fishes, and plants, which Mr Bruce delineated in the course of his travels in Abyssinia, would appear incredible, if he had not brought home his drawings to attest his assiduity in that particular. Although he was not long in the vicinity of the Red Sea, he drew above thirty kinds of fishes found in it; and collected a great number of its marine productions. As soon as they left Masuah, he and his assistant began to draw every rare animal, plant, and bird, which they could find. They were not scientific botanists nor naturalists, but they proceeded on a just and infallible plan. They painted accurately and beautifully every object which they reckoned curious. They attempted no classification; but all who have seen their drawings, have owned, that they are such as few painters could equal at leisure, and with every opportunity of time and situation.

The whole collection of natural history which Mr Bruce drew in Barbary, Arabia, and Abyssinia, amounts to about three hundred articles. Of these the plants and birds make the greater part; but all are so highly finished, as to excite the greatest admiration of his taste and abilities.

One inconvenience, however, attended Mr Bruce's exertions as a naturalist. He was able to draw any rare production of the country in which he travelled; but his informa-

tion respecting the history of that production was very scanty. He could not stay to watch the annual progress of a tree, from which he pulled a branch as he passed along; nor study the nature of a bird which he had shot by the road; yet whatever he had learned concerning these, he recorded. He always committed to paper a short description of whatever was drawn by him and his assistant; and in general on the paper which contained the sketch.

If his entire collection had been published by himself, or by some eminent naturalist, who could have arranged the different articles, according to the Linnean system, and made observations on their genera and species, it would have furnished a splendid proof of his industry and care, as well as a considerable addition to natural knowledge. As books of this kind, however, are interesting only to a small number of readers, and as the engraving renders them very expensive, Mr Bruce did not think it prudent to publish these drawings at his own risk, but contented himself with the selection given in the preceding Appendix. The same reason prevented him from obliging the public with the numerous drawings of ruined architecture which he had made at Paestum, Baalbec, Palmyra, and in Barbary.

A catalogue of the Arabic and Æthiopic names of the plants, birds, fishes, &c. in his collection of drawings, would afford little information to the reader; especially as these names cannot be translated without considerable danger of mistake. Some account of the times and places at which a few of the articles were drawn, will give an imperfect idea of that which he has done in general.

At Imbo, the fishes called dween, nagel, mulluss, elhudderi, geboul, mishaile, hubbar, and aboubishaitey. At Jidda, the fishes, arid, harid, suhail, zeezan, &c. At Loheia, the farr, kossar, bohalla, kemneff, gheet, cottone, deek aboujubbe, gunnel, and markeet, with many other fishes taken there, and at Rabac, Cossir, and other ports.

Of the plants, the papyrus, near Sidon, July 29, 1767; the musa, or banana, Sidon, July 31st, same year. In Egypt the sunt and saiel acacias; the lif, hodweg, and felfel. The doom, or palma cuciofera, at Sibt. The meim mesalib, or grass of the cross, and the myrrh tree at Masuah. In the way to Gondar, the agam, abbeselim, leham, terrah, and en-

doud, of the jasmine tribe; the dehhack and erret, two species of aloes (Mussauda;) the suf, a thistle with yellow flowers, with which they dye cloth; the nook, of which they make oil; the angouie and ombuay, with the berries of which they tan leather. To these may be added the wanzey (cordia), described in the preceding pages; the aquartti, a tree bearing a white flower, and long shaped fruit, with which the Abyssinians dye their fingers, or nails; the cusso, a purgative tree, found at the Tacazzi; the angua, described hereafter; the canjeb, a tree which produces a milky juice, said to be exceedingly hurtful to the eyes; the kummel (mimusops;) the merjombey, a species of solanum; the bohah, a tree bearing small seeds like dora, which are eaten; the gagudei and javeira, the last of which seems to be the wild olive, both found on Lamalmon, and many more on the way to Gondar.

At Goudar were drawn the daroo tree, which stands in the public square; the grawa, a tree with the leaves of which they season beer, or bouza; the Ghesh used for the same purpose, and the Alzazo, a large tree, with pieces of which the women perfume their clothes.

At Emfras, Mr Bruce drew the semec, a creeping plant; and in the island of Mitraha, in the lake of Dembea, several kinds of shongourt (allium;) as also a large tree, named selchienn. In the journey to the fountains he obtained the enset, woginus, erget, and several more in Agow-midre. At Geesh he found the krihaha; the hà, a kind of willow; the atatt, a large tree; the effarazengh, or egiv shonkourt, a sort of aloes; with many plants, Nov. 1770.

Other plants, drawn by him and his assistant in that country, were, the umfar, or amfar, at Addua; the coshillila, a species of thistle; the tambo, or mzena, a herb used in incantation by the Falasha: the logheta and menzi, species of oleander; the feel-fetch, a kind of hypericum; the dangheeli, a rush found at Addua; the atemobiss, a species of acacia; the dembelal, coriander; the ushish, a creeping plant with tentacula; the dorwan, or larkspur; the aiton balalitti, or scented nettle, found at Mai-agam; the cassia-fistula; the semezza, of the justicia genus; the leef, a creeping plant; the yeyadeetch, tsadjesar, &c. &c.

Of birds, the collection contains many drawings; but the names of very few of them are known. The beautiful plumage of these inhabitants of the tropical skies is finely represented, with great honour to the artist who painted them. Amongst others, are drawings of the pelican, flamingo, guinea-fowl of Habbesh, Riggobee dove, azzazu finches, benghalus angolensis, baganis, gaddit-goutoo, a bird of the same species; the Abyssinia gros-beak, or moloxita; yellow Bagla finch, corvus afer, the finch called worrabee, the awl-nebbed choka, the certhia Phillippina, and certhia violacea, the merops viridis, the red-billed promerops, le petit guepier de Philippines, the African jacana, the parra Senegallica, the muscicepa mutata, called halol; the seitan phares, or secretary bird; several kinds of owls, called gogua and goguta in Abyssinia; and different birds of the eagle and vulture species. It is indeed impossible to convey any idea adequate to the merits of this part of the collection, without entering into a complete enumeration and arrangement of the articles.

Besides the animals described by Mr Bruce in the Appendix to his work, he possessed several drawings of others found in Barbary and Abyssinia; such as the faadh, or panther; the madoqua, bohur, and fecho, species of the antelope, &c.

Those literary men, who have spoken with so much acrimony of the incapacity of Mr Bruce as a naturalist, ought to have considered that three hundred accurate drawings of natural history, all equal to the small portion of them engraved for his printed work, and most of them finished in the country where they were sketched, is such an effort in favour of science as few travellers have ever made.

The following addition to the author's appendix scarcely deserves the name of a selection of the rarest articles in his extensive list. The accounts of the cassia fistula, and houbarra, were written by himself for the second edition, which he was preparing, at the time when his death interrupted all further progress in that design. The other subjects have been chosen, partly on account of their descriptions having been made out at considerable length, on the papers upon which they were first sketched by Mr Bruce's assistant,

and partly on account of the uses to which a few of them are applied by the Abyssinians. The descriptions are translated from the Italian. They are not, indeed, so complete as could be wished: and the editor might have enlarged them with conjectural remarks, were it not apparent to every reader, that such observations, from a person who has never been in the countries in which the articles themselves are found, could neither be very instructive nor accurate.

CASSIA FISTULA*.

The Cassia Fistula is another tree, concerning which many ill-founded errors have been propagated. Although it grows in Syria, Egypt, and Arabia, yet it is a stranger in all these places. Abyssinia is its native soil; from which, like the incense, coffee, myrrh, and many others, it has been transplanted; but the goodness of the drug, which it produces in all those countries, is in proportion to the nearness to its native soil. Two of the most beautiful trees of it that I ever saw grew in the garden of Mattarcah, in Cairo. They were taller, firmer, and cleaner like in the bark than those I have seen in Arabia, or Abyssinia. From them, then, as perfect in all its parts, I shall describe the tree.

The cassia fistula grows tall and straight, equal to one of our ash trees; neither is its bark very dissimilar, from its being of a bluish-white, of the colour of burnt ashes, not in any shape furrowed or wrinkled, as the thorny trees of these countries generally are. This has no thorn; the branches that annually shoot out, and bear the flower, and then the fruit, are of a reddish colour, dark, and unvarnished, soft, and

* Plate, No. 44.

succulent; the leaves, too, that are young and new, are of this colour.

These branches shoot very irregularly from the tree; the leaves are two by two on the stalk, terminated by a single one on the point; the flowers grow upon a long naked stalk, which does not appear to have much strength; each flower is set single at the end of a stalk upon a perianthium, or calix of five leaves, nearly oval, or having a very blunt point.

These stalks, that support the flower, proceed irregularly from the longest stem, and are not two by two as are the leaves. The flower consists of five leaves, of a beautiful golden colour, which, when closed, is of a very agreeable globular form, a little upon the oval.

The pistil arises from the middle of the cup, and crooks when turned into the fruit pretty much in form of a sickle; it thickens as it ripens to the diameter of about half an inch, full of knots or divisions. In this a sweet blackish pulp is confined, which is the juice of the cassia. Entangled in the pulp are some seeds of a brown colour, in the form of a heart, which, as the pulp dries and expresses them into its several cavities, where these seeds are lodged, rattle and sound when they are shaken, which is only a sign that they are dry; and perhaps the time of pulling the fruit, when it is in its best, is before the juice is so dried as to leave the naked seeds liberty to make that sound.

This long pod, which the pistil grows into, is what keeps the juice about four months fresh. The pulp, the fresher and sweeter the better, is the favourite cathartic of the East. Above the pistil are three stamina, each with a large stigma and very fine farina upon it: these curve over the pistil, and are almost shaped like it. Below the pistil are four shorter stamina, which I never saw shoot to any length. Some authors, that pretend to have seen better, say, that these stamina turn all straight when the fruit ripens; but this I cannot say I ever saw. On the contrary, when the fruit, or pod, has scarcely acquired any consistence, the stamina, both large and small, were all fallen off, and appeared with the flowers of the calix, as seen by the figure. The leaves are pointed, pretty highly varnished, and marked with frequent ribs, which are not deeped marked on on either side.

Some authors have amused themselves with a fanciful division of this fruit and tree into Egyptian, Levantine, Brazilian, and cassia of the islands; and the truth is, they have forgot, or omitted, the only true kind that exists, which is the Ethiopic or Abyssinian. Thence it came an adventitious acquisition into Egypt, which, as I have often said, had no tree natural to it: thence it was carried by the Portuguese into Asia, upon their conquest of India, and settlement of Abyssinia; and followed their conquests and discovery of the islands and Brazil.

It has been confounded with cinnamon from it name; that is, with that bastard kind of cinnamon, called by the Italians, canella, which, notwithstanding what Bellonius says, and before him Pliny, grows plentifully among the incense and myrrh, at Cape Gardefui, the Mosylon Promontorium, or Promontorium Aromatum; and here only the distinction obtains of mountain cassia, and that which grows on the plain. This second sort is very near equal to that of Ceylon, if it is not absolutely so; and both sorts grow in the island of Ceylon likewise, where the canella, or zelo cassia, that is, cassia lignea, grows also, of a woody, earthy taste, not better than that of the same kind which grows at the Cape before-mentioned; and I do really believe, that, as the cinnamon tree was from the earliest antiquity declared to be part of the produce of the Promontorium Aromatum, it was originally brought from thence, and planted in the island of Ceylon, where it grows in some part of the island only.

Ptolemy Evergetes, who knew both kinds well from the commerce carried on both from Alexandria and the mouth of the Red Sea, mentions expressly, in the Adelan inscription, that he had conquered the country of the Troglodytes, near the Cape, expressly that which bore cinnamon. I have seen and compared both sorts from both places, as well the island of Ceylon as Cape Gardefui. I apprehend, this was the aromatic which is in Scripture coupled with the aloes, and was brought by the queen of Saba to Solomon, as part of the produce of her country; though it is probable the climate of Judea would not gratify that great prince, in allowing him to propagate it there, as he did the balsam. It is the similarity of names that has creat-

ed the confusion; for surely the cassia I am now speaking of, the carthartic drug, was not presented to Solomon as spices, or an aromatic; though, if the aloes were really the aloes of Socotra, this observation would be the less founded. However that be, it seems to admit of little dispute, that the zelo cassia was the bastard, or wild cinnamon, and that the Κασσια συριγη which is literally rendered by the Latin cassia fistula, is the same, now described presently, and vulgarly called the *pudding pipe tree.*

THE LEHAM, OR TOBERNE MONTANA*.

This branch, of a very beautiful Abyssinian tree, was drawn in the evening of the 18th of May, 1770, at Lamgue, close by the lake of Dembea. The army had passed Emfras, where Mr Bruce then resided, four days before; the country was laid waste in every direction; and as there was no safety out of the camp, he had determined to follow it, in hopes of reaching the sources of the Nile. His own account of the march may be found, Book VI. chap. 3. In these days of destruction, when the Ras, in a monarch's spirit, cried havoc, and let slip the dogs of war! the traveller, not altogether an unconcerned spectator of what was passing around him, nor incapable of comparing the beauty of the country with the savage character of its inhabitants, felt many emotions which description cannot express. The lake of Tzana is surrounded by plain and fertile shores, overflowed in the rainy season, but covered with fine pasture and blooming woods in the dry. At some distance from the east bank, little hills and elevated ground begin to appear. The wild tract of Balessan joins to Foggara; and the mountains of Lasta are discovered behind it. Great variety of odoriferous flowering trees

* Plate, No. 45.

and shrubs adorn the plains; the blue expanse of the lake interspersed with islands, the villages placed on the eminences which overlook the cultivated country below, are transiently mentioned by the author as features of the landscape which was then around his tent. But however lovely the situation, it could communicate little pleasure to a mind far from civilized society, pursuing fame in a land of barbarians, at the danger of life itself.

"Behind Laingue is a very extensive plain, adorned with fine trees of more than ordinary size, white as snow with flowers; the odour of which, resembling that of jessamin, was distinctly perceptible as soon as we got down to the plain from Emfras. These trees are called Leham. Nothing can exceed their beauty or fragrance. At the extremity of each little branch, they bear a prodigious quantity of long white flowers. These have a little stem, about two lines and a half long, on which is the perianthium, composed of five leaflets, terminating in a point, one line and a half in length each, and all green. The flower has a long body, nearly an inch, of a yellowish colour, from the extremity of which it divides into five white leaves, an inch and three lines long, and about two lines broad, each ending in a round point. The interior of the body is all yellow; and the same colour streams out in a line along a fourth part of each of the white petals. Within the case attached to the perianthium is the calix, and the pistillum about a line and a half long, of a bright green, which at the extremity has a head divided into two parts, each two-thirds of a line in length. In the interior parietes of the case are attached five stamina, one-fourth of a line in length, which have each a lanceolated head, its length one line. The foot of the stamina is two lines higher up than the bottom of the case. The young branches that bear the leaves are green; the rest are green and russet. The leaves are of a very beautiful varnished green on the right side, and of a fine but paler green on the reverse. Their principal fibres are yellowish on both sides. The tree bears many branches, which spring out close to the earth. It becomes very large; its branches have their extremities trailing on the ground. It is loaden with flowers from top to bottom in great profusion. Each bouquet, or cluster, of these contains

between 85 and 90, open or shut. The fruit is eaten; and has somewhat of a harsh taste. The flower has likewise a very agreeable fragrance, but a little harsh.

THE KRIHAHA*.

The history of the Agow nation, which possesses the rich country around one of the principal sources of the Abawi, is very little known. The language and manners of this people are different from those of the Abyssinians; they are not derived from Arabia, but from the African continent. If we may depend on a plausible passage in Cosmas Indoplaustes, they were subject to the king of Axum in the year 530. All the information, which we have of them, is given by Mr Bruce. They were slightly mentioned by the Jesuits and Ludolf; who, however, take notice of their conversion to Christianity during the reign of Susneus. That conversion was only nominal; they retained their Pagan rites as long as their liberty; at the loss of which they were driven in crowds to the Nile, and baptised in the name of the Trinity.

The altar, at the source of the Abawi, was overturned; and the annual sacrifice abolished. But the people, ignorant of true Christianity, found out the art of mixing their old and new religion together. A compound of these they profess at this day. They adore the genius of the river, and swear by it as the other Abyssinians do by God and the king.

It appears, from the letter of Ras Sela-christos to the emperor Sultan Segued, or Susneus, that they also worshipped a certain cane, or bamboo, which was found in their country.

Great plantations of this deity grow in the front of the precipice at Sukalla. These canes are of great use in ma-

king the roofs of houses, being long, firm, and light. Some of them are about ten inches in circumference, and perfectly straight.

The kribaha grows to the thickness of three or four inches diameter. Its length extends to *fifty-five feet; it has knots*, or joints, of a *foot and a half, sometimes two, or two and a* half long, the lowest joints are shortest, and those in the middle longest. From each of the knots springs a growth of secondary branches, of ten or twelve at each. Those in the middle of the tree are about five or six feet in length; and all the rest upwards gradually decrease to the topmost knot, whose shoots are about two feet long. Each of the shoots have knots of four or five inches a piece, from every one of which spring four or five smaller branches. Every one of these small branches have four or five leaves, disposed in the manner represented in Plate 47. Their colour is green, like that of a blade of corn; the reverse is a little lighter and paler. They are striated longitudinally throughout. When this cane is young it is green; but when it advances in age it becomes yellowish, and then dark coloured. The secondary branches make a similar progress. The root goes very deep, and sends out a quantity of small ones, as delineated in the Plate, No. 47, which rise upwards after having left the stem. The colour of these is yellow, a little deeper than that of straw.

These canes, when young, have at every knot a large leaf which surrounds the stem, and terminates in a point. All around the foot of this leaf is covered with a very fine pile, or hair, like velvet: the point and edge of the leaf itself has the same defence; but the hairs on the sides of the leaf are smaller and thinner. I have not seen the leaf have any but a light straw colour; the hairs have that of a dried coffee-beans. When young, the leaf is probably more vivid; but the straw-colour seems to prevail. These large leaves remain on the canes but a short time; for the secondary branches coming out at an angle of about 45 degrees between them and the cane, soon destroy them. It was in flower in the Abyssinian month Miazia, corresponding to our April. To-day, the 5th of November, they are in the state described above. They are found in the cliff or brow of a rugged hill, that looks S.,

S. E., and E. The interior of these leaves shines with a high polish. We have measured one of the smallest of the canes, and found its diameter two inches, its length thirty-two feet, its longest joint two feet two inches.

ANGUAH.

The plate (No. 48.) represents a branch of a tree found near the river Tacazzi, called Anguah. The Abyssinians believe it to be that which bears the true frank-incense; in reality, it produces a gum much resembling it. This branch carries young green leaves velveted on both side. The right side is of a lively green, inclining to yellow, and as bright as if varnished; the reverse of the leaf is of a green equally lively, but much fairer than that of the right. The stalks of the leaves are of a greenish colour, very fair, except at the foot, where they are reddish. The fibres of the leaves are much raised, and of a fair or whiter green, like the stalks of these. The bark of the branches and trunk is whitish, and as thin as paper; beneath it is another bark of a fair green colour. From the extremity of the principal branches arise five or six small ones, of a fair green, but of rose-red colour on the side exposed to the sun. Above these it sends out a great many small flowerets, supported by a red slip. The perianthium is red, and below greenish, divided into five leaflets. The flower has five red leaves with white borders. The interior of each of these is nearly white. The pistillum is green, and the stamina have a yellow head. All the red is of a rose-colour. The main branch is of a yellowish cast; it has two or three barks, one above another, thin like paper. The seeds are represented in the capsulæ as they were found on the left side of the branch. The second plate (No. 49.) gives a view of them ripe, and about to fall out.

THE GHESH *

Is a tree quite common in Abyssinia; the leaves of which the people are accustomed to put in their hydromel, or mead. It is not of a large but middling size. The bark is of an obscure ashy colour. At the extremity of the branches it sends out sprigs, which, when young, are of a slightly red colour. Their distribution upon the sprigs is triangular, but not in the same plane, or not at the same height, but rather at unequal distances; two of them being generally three lines, one above another, and the third about six lines distant from these. Each of them has a stalk about two or three lines long, of a very clear green. The leaves are of a very irregular figure; some more round, others more oblong, some are only half an inch, others two, or even three inches, and yet on the same stems. Their colour is of a deep green, but unfixed; and on the reverse lighter, approaching to yellow; on both sides slightly varnished. The leaves next to the extremity of the branch are of a lighter green, but very changeable and uncertain. The flower has five leaves, in a star-like form, and is about two lines in diameter. In the centre it has an ovary of about a quarter of a line in diameter, from which rises a pistillum, three-fourths of a line in length, terminated by five leaves nearly imperceptible. The whole flower is of a greenish colour, and the foot-stalk of it is a light red. The flowers spring from the principal branch at the places where the stalks of the leaves come from it; six flower stalks at each leaf, some longer than others; the longest about six, and the shortest about two lines. While undisclosed, the flower hangs in an oval form, terminating in a point; and it would seem that the foot-stalk lengthens as the flower approaches maturity. The above is a description of the tree as it appeared at Gondar on the 28th of June, 1770.

The leaves of the Ghesh are bitter and harsh-tasted. They are reduced to powder, and mixed with the mass from which the Abyssinians make bouza.

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* Plate No. 50.

THE MERJOMBEY (SOLANUM)*,

Is a small tree, or shrub, found on Lamalmon, in a place called Maccara. The Abyssinians use it as a cathartic, mixing its fruit with several other ingredients not yet known to us. The trunk is not very thick; it sends out many branches, covered with abundance of leaves, but in an irregular manner. From a single point it sometimes sends out five or six leaves, that have for their base a small slip, which divides into as many stalks as there are leaves. These last are of very different sizes; in general, the largest, and the divisions from it which carry fruit, arise all from one place. It is of an ashy colour, inclining a little to green, and streaked in an interrupted manner with small obscure lines. The extremity of those sprigs is covered with a fine but very rough down. The colour of the leaves is a beautiful green, but with little lustre; the reverse of them is of a lighter green. The fibre in the middle is very distinct on the right side of the leaf, and whitish; on the reverse all the fibres are very distinct and large, and of a colour approaching to white. All the leaves are equally covered with down, but a little thinner than that of the sprigs. From the principal sprigs go out other small ones, two or three inches in length, making an angle of about 60 deg. with the part which is towards the extremity of the large sprig, or branch. From these small sprigs arise six or seven still smaller, that bear the fruit. These last are all bent back towards the principal sprig, or stem. They are about an inch long; on the end of them are the leaves of the perianthion, which terminate each in a point, and are about four lines in length. These embrace the fruit, which is very globular, and somewhat smaller than a cherry. While unripe, it is of a very bright and beautiful green, varnished and covered with small white hairs very strong. This fruit is all streaked with longitudinal irregular lines of a very deep green. Its interior has in the middle a round woody core (colonna), about which, to the bark on the outside, are abundance of seeds of a round broad form. The interstices

* Plate, No. 51.

are full of a very viscous green substance. When ripe, the fruit assumes a deep orange colour. All the stems, as well the principal as the small, are clad with spinæ, or prickles, two, three, and even five lines in length, of a dead yellow colour. The whole perianthium and leaves, on both sides, are also covered with prickles, disposed by threes and fours upon the middle fibre.

THE NUK*

This plant is called, in Abyssinia, Nuge; it is the principal source of their vegetable oil; but the process of extracting it is not mentioned in Mr Bruce's papers. It is also to be regretted, that only a fragment of the description, by Balugani, could be recovered; the rest being either mislaid, or destroyed.

The plate is from a drawing of the plant, raised either in the royal garden at Paris, or in one of his majesty's gardens in the vicinity of London. This uncertainty is owing to the want of any marks on the drawing, by which the matter could be determined. M. Jussieu transmitted to Mr Bruce drawings and botanical descriptions of those plants, which were raised from seeds in the king of France's gardens; but Mr Bruce, displeased at the manner in which the superintendants had made use of his present (Vide the article *Farek*, p. 169. in this volume), on that account paid little attention to characters. Though M. Jussieu's description cannot be found, the particular use which is made of the plant throughout Abyssinia, is a sufficient apology for giving it here. All

* Plate, No. 52.

the parts of the fructification are so clearly and accurately displayed in the Plate, that any botanist may, at pleasure, determine its Linnean character.

The nuge is a species of sesamum. The practice of making oil from its yellow flower and seeds is very ancient. It grows to the height of four feet, or, in general, three and a half. The root is about three lines and a half in circumference, and two inches long, ending in a point. It is all covered with small roots, that have one-third or one-fourth of the thickness of the stem, at the place whence they spring out; are about two inches and a half long, and as small as hairs at their extremities. The principal stem at the root is three lines and a half in circumference; but it gradually diminishes to the top. Next to the root, the first joint, or knot, is an inch long; after which, the length of the joint, between knot and knot, gradually increases towards the top, the length of the uppermost being six or seven inches. On the whole stem there may be ten or a dozen of these joints. Close below each of these are two leaves rising from the principal stock, and opposite to one another, but in an alternate manner, those of one knot being opposed to those of another. Above these leaves rise from the stock small branches, which make an angle of about 30° with it. Each of these has two or three small joints, with two leaves below them; the ends of which, besides their leaves, support each two or three flowers of the kind delineated in the Plate. These flowers have nine, and sometimes ten, three pointed leaves, of a perfect yellow colour, somewhat lighter than that of gold. The leaves are of the figure represented in the Plate; but some of them are less convex on the sides than others, and more approaching to the parallel. Some of them are extremely oval; they are all denticulated in a rough and irregular manner. The middle fibre is whitish, and sunk in the leaf, on the right side, towards the footstalk. On the reverse the fibres are much raised. At its exit from the stock, each of the branches seems nearly as thick as the stock itself in that place. In some plants, I have seen the two leaves at the joints having their protuberant sides so united, as to have the appearance of being only one circular leaf with the stem in the centre; but this was probably accidental.

The description of the flower is wanting; but the number of pistilla and stamina may be reckoned from the parts analysed in the Plate.

UMFAR, OR AMFAR *.

This Plate represents the end of a branch of a tree called Umfar, found at Addua and Gondar, and in great plenty at Saccala. In the month of November it was not in flower at Saccala; but at Gondar it flowered in October; and was in full bloom in November. In Tigre it flowers in December. The trunk of this tree is of a dusky colour, approaching to pale, or ashy, very rough and uneven, and covered with a very scaly bark of various plies, one above another. The small branches are covered with similar bark; but the colour is whitish, stained with a dull red, between red and yellow. The extremity of each branch becomes more smooth, and of a quadrilateral form, and of an ashy colour, slightly tinged with green. It is covered with a very fine down, which comes off on passing it through the fingers. The leaves are disposed by two and two, one opposite the other, about two inches between each couple. One couple is not disposed on the same side of the stem with another, but cross-wise, and so on alternately, till the end of each branch, at which comes out an immense quantity of flowers on stalks. The leaves are of the form given in the Plate, of a deep green, inclining to yellow, on the right side, but nearly white on the reverse. The principal fibres on the reverse incline a little to yellow; but, on the right, they have no particular colour; and though they are marked with a very deep line, their stalk is not more than three lines in length, and they are fixed on the branch almost at right angles, or not at less than 80 or

* Plate, No. 58.

75°. When the principal branches come within ten or twelve inches of their extremity, they begin to send out flowers, and continue to do so till they terminate. When the branches are of the inferior kind, this begins only five or six inches from their point. At every interval above the leaves, on the stem, the principal branch casts out little branches, the lowest of which are about eight or nine inches long; but they decrease in length as they ascend the branch. These bear the flowers, and rise each from the trunk at the foot of a leaf, but about two lines higher than its insertion. They make, with the principal branch, an angle of about 50°; these, which are next the top, however, make only 45 or 40°. The first of these little branches are furnished with leaves of a smaller size, and with sprigs of flowers disposed on them, in the same manner as they are on the large branch, only the knots are nearer each other. These branches have each ten or twelve sprigs, not including that on their top; but the branches, approaching the extremity of the main one, being shorter, they have only six or four sprigs on them, and very small leaves. The flowers are disposed on the sprigs in large groups of twelve or fourteen in each, at about a line or two of separation, one above another, encircling the sprig. When undisclosed, they hang in little buds of a line in length, which open into four pointed leaflets. From these rises a straw-coloured tube, about a quarter of a line in diameter, and two lines and a half long, comprehending what of it is hid in the perianthium, or bud, above mentioned. The extremity of the tube divides into four small round leaves, of a very ripe orange colour. To the extremities of the sides of this tube are fixed four stamina, scarcely perceptible, of a straw-colour. At the bottom of the tube, within, are the ovarium and pistillum. The ovarium is of an ashy colour, inclining to green, and so is the pistillum, but its extremity is yellow. The ovarium and pistillum, together, do not amount to the length of two lines. While the flowers are not disclosed, they have a bright ash colour, inclining nearly to green.

KUMMEL*.

The fibres, which bear the flowers of the kummel, are greenish at the base, and assume upwards a russet colour, inclining to that of cinnamon. Before the flower appears, it is contained in a bud, at first very small, but resembling that of the rose. Growing, it lengthens to the extent of four lines, and is in diameter about one and a half. This bud divides into four parts, which form the leaves of the perianthium, each terminating in a point. Above this perianthium come out four leaves, a little straiter than the former, and white on each side; whereas, those of the perianthium are white only within. Between the four leaves of the perianthium and the four of the flower, are placed eight white leaflets, disposed in the eight angles which result from those before-mentioned. These last are at the base all joined together as a calix; they are as long as the rest, but all collected together like a bud, yet their ends are bent a little outwards. Around this calix are placed eight other leaflets, half the length of these, in their interstices. Around these leaflets, in the inner part, are disposed eight stamina, very small, with an oblong and fluted head, of a yellowish colour. The length of the head of the stamina is about a line, and they do not rise above the interior order of these leaflets above-mentioned. From the perianthium rises the ovarium, and from it the pistillum, which inclines to white, except the point, which is a little more yellow than the rest. The leaves of the perianthium have a part raised up the whole length of the leaflets like a rib. The stalks, on which the leaves are, as well as those which support the fruit and flower, are green. The leaves are strong, very like those of the orange tree; they have a yellowish fibre raised up on both sides, but particularly on the reverse of the leaf. This side is a little fairer, but both sides are completely varnished.

On another part of the paper is found the following note, entitled, "Remainder of the description of the flower of the Kummel."

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* Plate, No. 64.

To the exterior part of this calix, which has eight leaves, are attached 16 stamina; which, by two and two, correspond to the eight exterior leaves, and remain very open. On these last leaves each of those stamina splits gradually into three others. The longest of these stamina corresponds to the middle of the leaf on which it is spread. The ovary is about a line long, and the pistillum about four.

The fruit is of a tawny, or dead yellow; of an oblong pyramidical shape at the point, and rounded at the base where it is attached to the stalk. This tree, which is called in Tigre, Kummel, and in Amhara, Shie, or Essue, attains a considerable size. The fruit is ripe in December, but particularly in January. It is of the tribe called Mimusops.

HOUBAARAH*.

The beautiful bird, here represented, is very little known. The figure I have here given, if it is not the only one, is surely the only intelligible one, or from which any guess can be made at the bird from which it was designed; not even excepting the figure by Dr Shaw, who, as far as I know, gives the first particular description of it.

It is all over Arabia and Barbary called Houbaara. It is frequent in the deserts by the Persian Gulf, and in the sands of Palmyra, bordering upon Damascus. It is found on both sides the Euphrates, and no where changes its name. I will not, however, decide, whether it is the bird mentioned by that name in the Arabic version of the Scripture, although I am very much inclined to think it is so. By its having been often

* Plate, No. 55.

named, together with birds inhabiting places that, from the particular catastrophes of the times, have become scenes of desolation, and as such described by the prophets, many have been led to think, that there are circumstances in its nature that have a more than ordinary affinity and connection with the scenes of desolation there described. For example, the owl, the bittern, the night-crow, and several others that are found in the melancholy list of birds inhabiting places devoted to destruction, naturally impress the mind with an imagination, that they are somehow or other intimately connected with that destruction they must have been spectators of. This is, however, sometimes mere imagination, as is the case in the example of the bird before us. It is a clean granivorous bird; and, though it lives in the desert, this is supposed to arise from a propensity it has, in common with many other birds, to keeping itself dry, and free from wet and dirty soil. It seems to partake of the nature of the bustard; and so Golius and Bochart have thought; though others, for no good reason that I can find, have thought the contrary. In size, it is as large as a full grown pullet, somewhat longer in proportion. Its head is crowned with a large tuft of feathers; half of the fore-part of which is black, the rest a greyish white. Its head is a reddish brown; its throat white; and the feathers of the back of the head are small and fine. It has a ruff of very singular form and structure. It is black from the middle of the neck, and stands back, in the shape of a wing on the one side; then, on the front, and before its stomach, it has the appearance of an apron, which goes all round, where its stomach is situated, and joins the left side of the neck, making the same form, or figure, as it did on the left; so that the neck seems to stand between two wings of feathers, joined together in the fore part by the apron that covers the stomach before. These feathers, disposed on each side, as also those upon its head, are of the consistence of those of the dung-hill cock, when he is angry, or intending to fight, and the same holds in the Houbaara: for it is only on those occasions that he erects his plumage, which is a token that he is angry. His belly is white, all but under the anus, which is spotted with black, in large transversal spots. Its thighs are covered with white feathers till the joint, which

is bare; the leg below the joint is two inches long. It has three toes not jointed; each of these terminate with a strong sharp claw. It runs with great velocity upon level and smooth ground, which it affects. It is of all others the bird that gives the best sport with the hawk; having a great variety of stratagems to elude its enemy, besides the swiftness of its flight. Its body, back, and tail, is brown, beautifully spotted with black; the point of its tail is fringed with white, about a quarter of an inch. Its beak is black pointed; and in shape is pointed as granivorous birds, and about two inches long. The flesh is black; in taste, much like that of wild fowl of the game kind, and resembles much the bustard, such as we find in our Downs in England. This bird was shot at Syene, on the skirts of the desert, immediately under the Tropic. The town's people, at first sight, knew it by the name of Houbaaraa; and such I take it may be called in all time coming.

MADOQUA ANTELOPE*.

In our journey to the sources of the Nile, we found a little wild animal, called, in Abyssinia, Madoqua. From its properties, it would seem to be the same with that described by M. de Buffon under the name of Grimme, excepting in the horns, which, neither in figure nor situation, are like those designed on the head, brought by M. Adanson from Senegal, which M. de Buffon took for that of the animal in question. In our animal, the horns are round and straight, and make a large angle with the line of its face; on the contrary, in the drawing of the head brought from Senegal, the

horns are so bent towards the neck, as to make a quite opposite angle. The ears in this animal are within more full than those of the Fecho. The length of the whole body, from the point of the nose to the anus, was 32 inches; of the head, from the point of the nose to the origin of the horns, 9½ inches; the round of the mouth was 4 inches and 1 part; its aperture, in profile, 1⅝ inches; length of the eye, from one angle to the other, 1 inch; distance between the two eye-lids, when open, 5 lines; distance between the anterior angle and the point of the lip, 3¼ inches; distance between the anterior angles of the eyes, measured in a straight line, 1 inch 6½ lines; circumference of the head, taken before the horns, 12 inches; length of the ear, 4⅝ inches; distance between the ears and the horns, 1 inch; length of the trunk of the tail, 4½ inches; its circumference at its origin, 2⅝ inches; the inferior diameter of the horns, 4 lines; length 1½ inches. The outer part of the horn is composed of longitudinal fibres, from the top to the base, without being interrupted. It has about half a line of solid part round about. These are supported by a heart of bone, springing from the skull, which is about two-thirds the length of each horn. Length of the neck, taken before, 5 inches; circumference, taken near the head, 10 inches; circumference of the neck, near the shoulders, 11¼ inches; height of the neck, 5 inches; circumference of the body, taken behind the fore legs, 19⅝ inches. Total height of the body before, 19 inches; total height behind, 21 inches; length of the shoulder from the blade to the knee, 5 inches; circumference of the knee, 3⅜ inches; length of the shank, 4 inches; circumference at the smallest place, 1 inch 7½ lines; height, from the foot below to the knee, 5⅝ inches; distance of the top of the shoulders from the base of the foot, 11¼ inches; circumference of the body, taken before the hind legs, 20½ inches; length of the body, taken from the point of the breast to the anus, 20 inches; circumference of the snout behind the nose, 5 inches; distance between the horns, taken from centre to centre, 1¼ inches.

Between the angle of the eye and the nose it has a spiracle 9 lines long, which oozes out an odoriferous humour. This is situated parallel to the aperture of the mouth, 2 inches from the point of the nose; the distance between the angle of the

mouth and this spiracle, is 1 inch and ½ line; and there are 5 lines between it and the anterior angle of the eye.

The Madoqua has six vertebræ in the neck; 14 dorsal and 6 lumbar vertebræ; 5 joints in the os sacrum, and nine in the tail. The true ribs are eight; the false, six.

A drawing of the head and skull is found in Mr Bruce's collection; but it was thought superfluous to engrave it. In each jaw, both upper and nether, the Madoqua has ten jaw teeth, five on each side; and eight incisors in the lower jaw. In the upper jaw there is a place for a tooth on each side vacant.

The hair over the body is of a chesnut bright colour.—There is a tuft of black hair, about 2½ inches long, between the horns; a stripe of black down the face to the nose; the outside of the tail is black; and a stripe reaches down each fore leg from the knee to the hoof. The hind legs are also black from the pastern to the hoof. The black occupies all the four legs round about from the pastern downwards. The hair of the throat and belly is of a dirty white.

The other species of the Antelope, common about the sources of the Abay, are the Feho, or Fecho, and the Bohur. Of the last of these Mr Bruce gives the following account.

The Bohur is the largest of all the Gazelle kind. His horns are solid, and he casts them not; they are crooked outwards. He is thick covered with hair, something above an inch long; the two-thirds of each hair of a dark chesnut colour; the point, or one-third, red; this runs all along the back, and for about two inches on each side the spine; upon his buttocks the hair is red without any mixture of black, as also upon his loins; upon his shoulder and neck it is lighter, drawing to a dirty white; on his throat of the same colour; under his jaws only is white; his hind-legs are red, both on the inside and out; on the inside somewhat lighter than the out; but the edge of his thighs and his hinder legs have a white stream, which comes from his belly, and reaches to his knees; his fore legs are also of the same clear red, but rather paler; and he has a chesnut-coloured band, which reaches from the middle of the shoulder down to the pastern, or hoof; the hair of his legs is bright, and has a lustre like gold. His hoofs are large and well-proportioned, which is rare in the Gazelle kind; they are of a dark-brown, with light

clouds like tortoise-shell; the chesnut-coloured streak lighter as it comes nearer the hoof; his tail is sma above, and white at the bottom; his ears are thick co with the white hair within, in three bands, as usual; whereas it is usual in animals of this kind to have the without but ill-covered, this has his thick covered with sh close hair from the root to the top, and interspersed wi black long hairs near half an inch long; his front belo his ears, and below his horns, are of the same mixed brown colour as his back, only the hair is thicker and stronger; his eye-brows are long and black; his horns consist of several coats, which, from time to time, scale off; the first of those is about, or scarce a line in thickness; they are streaked longitudinally, and less hard than the inner coat. He lives in the high grass, and does not enter the wood unless forced; he sleeps during the heat of the day in the long bent grass, generally near the banks of the Nile. His body is round, strong, and very fleshy; of an excellent taste, red, and not fat; part of the Abyssinians eat it, and part do not. He does not appear to move with so much agility as a Gazelle: but yet, by reason of his length, makes great way; he stops at certain distances, and stares upon his hunters. The people say the female has no horns. This was a male; the truth I cannot assert, only I saw several that seemed wel grown without horns; his neck is of the same colour thighs and lower parts of the shoulders. The mixed begins only where his neck ends, or his back be never saw any large troops of these animals toget quently one alone, or two, at most three. They ar to Maitsha, and the country of the Agows. The sists of an outer bark, very fragile, and of a tex bling wood rather than horn. Within it is bla ceeding hard and solid; hollow all up till wi inch of the point. Though this horn app round, yet it does really make an angle in the ately next the eye, towards which the point i ward, and its form at the base is triangular; the angle projecting towards the eye, perpendicular fall from the part of the horn turned outward.

The Fecho and Madoqua have both horns wi

hich is of so loose a texture, that it crumbles to small in cutting with the knife. They are of the kind of ntelope, and nôt of the stag; that is, have a fust within, are not solid. This bark, or outer coat, is about a line hickness; but it is scarce perceptible, or but as a thin le.

ANTIDOTES USED BY THE NUBA AGAINST SERPENTS.

The Abyssinians call all the black nations which surround them on the north, west, and south-west, Shankala; a generic name, which they apply even to the people in the provinces belonging to Sennaar. The Nuba, Funge, Shilook, Dinga, eople called Fertit, the Doba, and Dobena, and in short, all fect blacks, go by this appellation. These nations form a f men distinct from the Arabs and Galla, and seem e aborigines of Africa. They inhabit the extensive between the Abay and the Bahar el Abiad down to They dwell along both sides of the White River ource. The Meks of Sennaar have transplanted them into the low country, on the banks of the defend their territories there. Many of these ken from the mountains around the White Ri- etain their priests, and Pagan religion. They oon; from which practice the name of Jibbel ly, was given by themselves to the hills where Abiad rises. They wear thick bracelets of cop- their wrists and ancles, which they get from the s of Fertit, and others of that metal, in their na- ins. Small nations of these black Pagans are the hilly districts south of Darfûr. The Arabs

make war on them, in order to take slaves, and send many of them to Cairo, and other remote markets.

The Nuba are more kind-hearted, less cruel, and more simple and sincere than the Arabs. They believe in witchcraft; and the following superstitions were told to Mr Bruce on the banks of the Dender, and are described here in his own words.

"There is a prevailing opinion in Sennaar, and all the country about, that there are wizards, who, by their looks and charms, have power to throw, as they please, a man, or a woman, gradually into decay, which, at last, terminates in death. There is a root of a tree, which comes from the province of Fazuclo, which is sold in the market publicly as an antidote against that. A few chips, put into the mouth, effectually preserves a person. It is said the Nuba are the wizards; and it is from their country the remedy comes, where this is also believed to be fact. I have seen several in this disease. It seems to be a hectic fever, probably the end of some illness; the eyes, face, and body are as of a person in the last stage of a consumption; and this happens more seldom in men than in women. I never saw children have it. It is frequent in the deserts of Barca about Augila. I saw two women put to death in that country for this; they call it drinking their life; it is called Bauda in Abyssinia, where it is also common, especially among the Galla of Gojam. In all these places they believe that the hyænas, which are frequent in the streets of all their towns at night, are those enchanters in that shape; and they will not touch the skin of a hyæna till it has been prayed over, and exorcised by a priest. The Falasha in Abyssinia answer the purposes of Pagan Nuba in the cure.

"There is among the cow-keepers, or neat-herds of the Refaa Arabs, and Nuba, a very singular species of idolatry; they choose, each from among themselves, one whom they constitute their god; and that god adores another cow-herd as his god, and so on. This is common in Fazuclo, and in all the countries from Lowna.

"The Nuba in Sennaar cure the venereal disease with a root of a tree pounded in water. The patient is shut up, and eats only maize and water, called belleel, for forty-one days; after

which he comes out perfectly cured, whether by abstinence, or medicine, is uncertain. The root is purgative. They also use earth of a certain kind, brought from without the limits of the tropical rains, near Gooz. It is saline, has no strong taste, and seems a kind of magnesia alba. This they also use for their ulcers; but it is at times unsuccessful, drying them up, and often occasioning an universal pox.

"In Abyssinia the handling of serpents without harm is known. The Nuba have charms both against vipers and scorpions. It is even a shrub the Abyssinians make use of, not resembling the plant used by the Nuba, and certainly different. I have seen the serpents bite the people who held them; but the bite was neither attended with pain nor inflammation; no remedy was applied but sucking the wound, which bled plentifully in four places. This art is known in Barbary and Egypt; but the danger prevents us from trying the herbs."

The following plants were pointed out to Mr Bruce at Sennaar (July 25, 1772), by a Nubian, who was from the country on the Bahr el Abiad. The minute description he gives may enable future observers to identify them. An antidote, or remedy, against the bite of the scorpion, would be a valuable acquisition to mankind in general, which only the Nuba seem to possess.

Antidotes against Vipers and Scorpions, used by the Funge and Nubians in Sennaar.

"The first is called Labreshat, in the language of Sennaar; Largemi, in that of the southern negroes of Shankala; it is a root about a foot in length, and somewhat above an inch around; but more commonly found not above the size of a common whip cord; it is tough and pliable, covered with a thick bark, which easily cracks, but does not easily detach itself from the root; it has something the form of white liquorice, but is of a darker colour. This root is generally straight, and shoots perpendicular into the earth, but has no fibres, or branches. From the side of this root, generally

about half an inch from the top, sprouts out a branch, thin and covered with a smooth deep green bark. This rarely grows above an inch long, and decays at top; and half an inch below, on its side, sets forth another small twig, seldom more than one. On this grow the leaves, disposed one by one, alternately on opposite sides of the stalk; they are ordinarily about two inches long, and three lines and a half at the top, growing smaller to the point; the ribs are scarcely marked or distinguishable, joined by a small stalk to the branch. This leaf is at first of the colour of laurel, but turns black and saddish on keeping. The Nubians distinguish male and female by the flower; that of the former being red, and the other white. I never saw either flower. The branch which bears the leaves never grows half a foot high out of the earth. It had leaves on the 25th July 1772, after there had been considerable rain at Sennaar. It grows near the Nile in the red soapy clay, which is the soil there, and where all their dora is sown. This is against all species of the viper kind. The root having been dried at the sun, then pounded, if a piece, very small, be chewed, and the hand be rubbed with this spittle, the viper will suffer himself to be handled without offering to venture a bite; and upon being continued long in the hand, where is this bruised root, or the tincture of it rubbed in the hand, will sicken and die without any offence. It is but little bitter to the taste, and of no strong or disagreeable smell; it something resembles liquorice.

Second Plant.—From a root much resembling horse raddish, nearly in form of an egg at top, and open at the bottom, divided into a fork, or two legs, grows a succulent stalk, or often two or three, of the size of a large earth-worm. This stalk is white and feeble as far as it is covered with earth; after which it is a light green, and seldom above eight inches high. From the green parts of this stalk grow the leaves alternately on the opposite side of the stalk; the two opposites are generally less than half an inch distant; there is then a large interval, near an inch and a half; and then the two others, which I say are placed alternately on opposite sides. There is no knot, or ring, around where the leaves shoot: these are always three in number; the first large, and in five divisions; it is altogether above an inch and a half broad, of

a bright green, something like that of cellery. When the large leaf has arrived at its full size, it falls off, and then it is succeeded by the second, which is advanced; the third takes place of the second, and it then shoots a small one for a third. These leaves are fastened to the principal stalk by a thready succulent root, long, near a third of the length of the leaf. The ribs part all from this root, and are considerably raised on the back of the leaf, and hollowed, or sunk in the front. There are five principal ones. The stalk and leaves of this are perfectly tasteless, and without smell. The Nubians say it bears both fruit and flowers in abundance. I never saw either. It had just shot out this succulent root when I saw it, the 25th July near Sennaar, on the banks of the Nile, where it is in great plenty in the very same ground with the former root. The root is of a dirty yellowish white, full of small knots, which seem to have been roots of fibres; and the root is also surrounded with small fibrous circles horizontally, like hoops around it. The leaves and stalk are covered with a sort of prickly down, scarce perceptible to the touch, which has probably given it its name, Abou sont, the father of the acacia *.

The root of the third plant is crooked, hard, and woody; its body is about three inches long, when longest; at the bottom shoot out long thready fibres, tough, and of the same consistence with the root. The fibres run strongly into the earth, but considerable part of the body of the root is out of the earth uncovered. It resembles the root of wild thyme, at first sight. From the sides of this, near the top, shoot forth a great number of green branches, fluted, and seldom above four inches long; upon these the leaves are disposed, two and two on opposite sides of the stalk. These are generally three in number; one large and two lesser, joined to the principal stalk by a foot of about an inch long. The leaf is generally about three-fourths of an inch in length; and at the shoulders, above half an inch in breadth, lightly serrated, like the nettle, of a deep green on the right side, but pale on the reverse; the ribs are faintly marked;

* An Arabic phrase, signifying *like the acacia*.—E.

the branches, or stalks, terminated with a head of white flowers of the form of pea-blossoms, out of which project a pistil surrounded with several small filaments, or stamina, whose heads are covered with orange-coloured farina. This flower is contained in a cup of one leaf, divided into several segments; each of these flowers do not exceed a line in length; they grow two by two, on the head, on opposite sides of the stalk; and two or three, like the leaves, sprout out together on each side, joined by a small foot to the stalk near the length of the flower. This whole head, occupied by the flower, is about three-fourths of an inch in length. The whole of the plant above ground seldom exceeds five inches and a half.—It grows in the same ground with the rest near the Nile, and was in flower and leaf on the 25th July, 1772, when I was at Sennaar. It is used, bruising the root in the hand, against scorpions, who are rendered harmless by it.

The fourth plant is also for the same use, against scorpions, and produces the same effect. It is a round root of the size of the largest musquet ball, full of small fibres, which spring out on all sides; from the centre of this springs out the plant, the stalk of which is an inch and a half in length, feeble and flexible, thickest at the root, diminishing, however, but little. From this principal stalk sprout branches on all sides about four inches long, alternately disposed on the stalk. This stalk is lightly channelled; the leaves are above half an inch broad, fixed to the branch by a foot like the vine leaf; they grow alternately on the branch. They resemble the vine leaf in form; they are of a bright vivid green on the face; pale on the reverse, when growing, but turn black soon after gathering. They have on them a small white soft hair, like down. The ribs are five principal ones raised on the back, as in the vine; and distinct and well-marked on the right side also, but not hollowed. The flower is of the size of a pea, but oval, and covered with white down. I never saw it blown, but only shot, though it seemed to be arrived at its full size, and ready to blow, and the cup divided into four oval pointed segments. From where the leaves sprout out come likewise tendrils, like a vine, which shew it to be a parasite. This is very rare; I never found but one the Nubian brought me, though it grows in the same ground as the rest, at Ayra, near the Nile, three

miles south of Sennaar. It has little taste, as most herbs have, which, like this, were gathered in the season of rain; though, as to its virtue, the Nubians knew no difference of seasons. All these plants are equally efficacious; the three against scorpions; the fourth, which is a shrub, against vipers. The south, which is the country of these slaves in the regions of Shankala, from Fazuclo to the frontiers of Agow, abound in them all, and many others. There is great plenty at Sennaar; though it is in their own country these slaves learn the virtue of these plants and roots, to which the Arabs and people of Sennaar are strangers. When a person is newly bit, they chew a piece, and apply it to the place, and he is immediately cured. If a person chew this root often in a morning, the serpent or scorpion will not bite him. They dry all these roots, and then pound them to powder, and mix them well together, and put them in a leathern purse * ready for use; and when they are to handle a scorpion, or viper, they take a few grains of this powder, and moisten it with water or spittle, and rub it in their hand, and then lay hold of either without fear. Providence has placed this remedy in abundance, where there is much need of it. The bark and holes of all the trees in this country are full of scorpions in thousands, and the plains full of very poisonous vipers, especially in harvest. These come out of their holes in the time of the rains, and lie in heaps wherever they find straw, dry herbage, or old houses. There is one circumstance, which I had forgot, which scarce deserves remembrance, that these roots are to be pounded to powder by the hands of a virgin."

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* A leather bag, with these plants in it, was brought home by Mr Bruce, and is preserved.—E.

OBSERVATIONS

OF

LATITUDE AND LONGITUDE,

MADE BY

Mr BRUCE IN AFRICA,

IN THE

YEARS 1769, 1770, 1771, AND 1772.

(From the Journals.)

	STARS.	ALTITUDES.	
Dec. 27. 1768, in Farshiut, in resid. of the Friars	Rigel, Eastern should. of Orion	55° 28′ 30′ 71 17 0	Fine weather and calm
Jan. 7. 1769; Tent on the bank of the Nile, on the Calish that goes to the city, 300 paces to N. E. of Dendera	East should. of Orion Sirius	71 10 30 47 25 59	Good obs.
Jan. 10. In the tent, to south, immediately out of Negade	Rigel East should. of Orion	55 38 71 27 30	Good obs.
Jan. 15. In the tent at south side immediately out of Luxor	East should. of Orion Procyon,	71 33 0 70 6 40	Both many clouds

	STARS.	ALTITUDES.	
Jan. 16. In ditto	East should of Orion	71°39'30"	
	Sirius	47 54 20	
Jan. 22. In Badjoura	East should. of Orion	71 17 40	
Jan. 23. In Badjoura	Rigel	55 28 20	Good obs.
	East should. of Orion	71 17 40	
Feb. 6. In Girge	Rigel	55 11 3	Much wind that made the tube shake
	East should. of Orion	71 0 35	
March 26. Cossir	Northern, in the Virgins belt, marked δ	68 32 20	
	Southern, in the Virgin's belt, marked γ	63 42 15	Good all
	Spica Virginis	53 56 10	
April 5. In Cossir	Regulus	76 58 30	Obs. susp.
April 22. Imbo	Regulus	79 2 15	Good
May 7. Jidda	Spica Virginis	58 35 30	
July 3. Jidda	Lucida Librae	53 28 45	
	Star in Libra, β	60 1 30	
	Star β of the Scorpion	49 23 45	Good
	Antaris	42 39 45	
	ζ of Serpentarius	58 28 0	
July 21. Loheia	(α) Head of the Scorpion	52 22 40	
	Antaris	48 26 0	Obs. good
	Thigh of Serpentarius, ζ	64 14 40	
August 5. Loheia	Antaris	48 25 50	
	ζ of Serpentarius	64 14 40	
Aug. 18. At Loheia	Lucida Lyrae	67	
21. Ditto	Meridian Altit. of Sun	85 34 50	Wea. a litt. cloudy
25. Ditto	Ditto	85 14 40	Sun was under clouds
26. Ditto	Ditto	84 53 20	Good obs.
27. Ditto	Ditto	84 32 15	Obs. clear
Sept. 15. At Dahalac	Ditto	77 26 45	Clear
22. At Masuah	Sun's Merid. Alt.	74 50 55	Clear

	STARS.	ALTITUDES.	
23. At same place	Sun's Mer. Alt	74 27 10	
23. Ditto	Rigel	65 55 50	
" Ditto	Bellatrix	80 32 0	
Ditto	Middle in Orion's belt, F	73 3 20	Light clouds
Ditto	Southern in Orion's belt	72 20 15	
Ditto	Eastern shoul. Orion	81 45 40	
24. Ditto	Lucida Aquilæ	82 41 30	Light clouds
25. Ditto	Mer. Alt. of Sun	73 40 45	Light clouds but sun
26. Ditto	Same	73 17 15	Clear
Oct. 21. Ditto	Sirius	58 0 25	Clear
Ditto	Sun's Mer. Alt.	63 28 0	Clear
Nov. 23. At Dixan	Middle in Orion's belt	73 10 10	
	Star to E. in Orion's belt	72 57 30	Clear
	Betelgueze	82 23 0	
	Sirius	58 37 45	
	Procyon	80 49 55	
23. Ditto	Mer. Alt. Sun	54 50 20	
Dec. 2. Kellah	Rigel	67 6 50	
	Betelgueze	82 56 20	Clear
	Procyon	81 23 40	
11. Addua	Mer. Alt. Sun	53 4 35	Clear
12.	Ditto	52 59 50	
13.	Ditto	52 55 50	All clear
15.	Ditto	52 49 50	
16.	Ditto	52 46 35	
Jan. 18 1770. Axum	Rigel	67 25 0	
Ditto	First in Orion's Belt	75 24 50	
Ditto	Last in Orion's belt	75 49 10	Clear
Ditto	Betelgueze	83 14 30	
Ditto	Sirius	59 29 0	
Ditto	Procyon	81 41 20	
Jan. 19. Axum	Sun's Mer. Alt	55 53 25	Clear

	STARS.	ALTITUDES.	
Jan. 22. At S. W. of Sire, at distance of $\frac{1}{3}$ mile from the town	Rigel	67 26 50	
	First in Orion's belt	75 26 30	
Ditto	Last in Orion's belt	73 50 40	Clear
Ditto	Betelgueze	83 16 20	
Ditto	Sirius	59 31 15	
Ditto	Procyon	81 33 20	
23. In same place	Mer. Alt. Sun	56 49 20	Light clouds but sun-shine
26. At the ford of the Tacazze	Middle in Orion's belt	74 55 30	
	Last in Orion's belt	74 12 25	A little cloudy
	Betelgueze	83 38 20	
31. In Addergey beside the river Mai Iumi	Merid. Alt. Sun	59 33 15	
	Foremost in Orion's belt	76 6 20	
	Middle in Orion's belt	75 13 20	Cloudy
	Last in Orion's belt	74 30 10	Wind
Feb. 1. In Ditto	Merid. Alt. Sun	59 50 5	
	Arcturus	83 5 0	
	γ in Corvo	60 19 45	
	δ in Corvo	61 20 55	
11. At Mackara, and the church of Yasous, on Lamalmon	Spica Virg.	66 57 0	Cloudy
	Merid. Alt. Sun	63 14 50	Clear
Mar. 3. Gondar, capital of Abyssinia	Spica Virg.	67 28 30	Very clear
	τ of the Scorp.	55 29 0	
	δ of the Scorp.	58 16 25	Clear
	π of the Scorp.	52 24 30	
	Antares	51 31 50	
	Merid. Alt. Sun	70 58 50	Flying cl. but sun seen
Mar. 4. Gondar	Ditto	71 21 40	
	Last in Orion's belt	75 20 30	Flying cl. but sun clear
	Betelgueze	84 46 0	Clear

	STARS.	ALTITUDES.	
	β in foot of Canis maj.	59 34 15	Clear
	Sirius	61 0 30	
	Procyon	83 13 10	
March 5. At Gondar	ζ of the Scorp.	55 29 10	Clear
	β of ditto	58 16 30	
	π of ditto	52 24 30	
	Antaris	51 31 55	
	Mer. Alt. Sun	71 45 0	Flying cl. but sun seen
6. Gondar	Middle in Orion's belt	76 3 40	
7. Ditto	Betelgueze	84 46 0	Flying light clouds
8. Ditto	Ditto	84 45 55	Clouds
9. Ditto,	Mer. Alt. Sun.	72 54 50	Clear
	Ditto	73 18 25	Clouds, but sun clear
	Middle in Orion's belt	76 3 30	Clear
	Last in Orion's belt	75 20 25	
	Betelgueze	84 46 0	
	Sirius	61 0 30	
10. Ditto	Mer. Alt. Sun	73 41 44	
11. Ditto	Ditto	74 5 20	
12. Ditto	Ditto	74 28 55	
Ditto	Sirius	61 0 35	
13. Ditto	Mer. Alt. Sun	71 52 30	
14. Ditto	Ditto	75 16 0	
16. Ditto	Ditto	76 30 20	Very clear
	Sirius	61 0 25	
	Procyon	83 13 15	
	Clear in foot of Pollux	81 8 20	
April 10. At Emfras, in Foggora	Merid. Alt. Sun	86 5 0	Clear
	Clear in foot of Pollux	80 44 45	
April 11. Ditto	Merid. Alt. Sun	86 27 10	
	Clear in foot of Pollux	80 45	
12. Ditto	Merid. Alt. Sun	86 49 10	
13. Ditto	Ditto	87 10 40	

	STARS.	ALTITUDES.	
April 14. Ditto	Merid. Alt. Sun	87 32 20	
15 Ditto	Ditto.	87 53 50	
Nov. 15. 1770. At Saccala		63 14 30	Cloudy
April 6. Ditto		62 56 0	Cloudy but obs. good
Jan. 6 1772. Tcherkin	Merid. Alt. of Sun's upperl.	54 28 25	Clear
7. Ditto	Ditto	54 45 30	
26. Horcacamoot	Ditto	58 29 15	Good

Observations at Teawa, not found; it is stated in the original Journal, N. L. 14° 2' 24" from a calculation of which the basis is lost.

The remaining observations of Latitude, in the Journals, are given at the end of the observations of Longitude, which follow.

OBSERVATIONS

ON THE

SATELLITES OF JUPITER.

THESE observations were made with the following instruments: 1st, A reflecting télescope, by Adams, made, as was said, for Wortley Montague, esq. of two feet length in the tube, with two eye-glasses of different powers. This instrument, though not bad, had nothing excellent in it. The second was a reflecting telescope, made by Short, of the same length, with two eye-glasses likewise; but as the medium was for the most part perfectly clear at the places of observation, the shortest, or greatest magnifying power, was always used. The third was a refracting telescope, made by Dollond, upon a very complicated stand, composed of cross rulers of mahogany, four feet in length of the tube, perfectly steady under cover, but not quite so in the outward air, if any degree of wind blew; otherwise a pleasanter instrument in use than any of the other two. The instrument used in taking all the altitudes, was a three-foot astronomical quadrant made at Paris for the king's observatory at Marseilles, by L'anglois; it is described by Monsieur de la Lande in one of his volumes upon astronomy, and is reputed by him to be the most perfect instrument ever constructed in France. It was sent me by the king, Louis XV. upon my losing all my instruments by shipwreck on the coast of Africa, when it was impossible to get new ones made; all the excellent instrument-makers in Europe being employed by the astronomers of different nations then much engaged about the transit of Venus.

The next was a pendulum clock, sent me from Paris likewise; my own, made by Ellicott, having perished in the Gulph of Sidra, where I was shipwrecked. It is a time-keeper, of a very simple, useful, elegant construction, by Lepeaute; the parts, however well conceived, were executed in a very slovenly inaccurate manner; and being upon the whole but an indifferent instrument, little confidence was, therefore, reposed in it, as may be inferred from the observations. Its plan has, however, been imitated here, in Scotland, under my own eye, with the greatest success; and several of the same movements have been executed to universal satisfaction, with this difference, that the Paris time-keeper cost twenty-eight guineas, and that made here, with a gridiron pendulum, cost me but seven.

My friend, Mr Russell, secretary to the Turkey company, sent me a very excellent watch, by Ellicott.

My barometer was chosen from the best made by Nairn and Blount. Our quicksilver was all lost by an accident at Jidda, and it was there filled anew by some of the cleanest and heaviest quicksilver I ever remember to have seen, given by the gentlemen of the ships from the East Indies.

The thermometers were various: that used in the house was a very sensible one, of about eighteen inches in length, by which the others used on the road, when this was packed up, were all regulated.

I beg leave to say, that all the observations were made with the utmost care and attention possible; that no labour was spared in the frequent and constant rectification of the quadrant, both in the horizon and zenith; that though several of them were made in circumstances, where the mind may reasonably be thought not to be in a state of perfect repose, yet every thing was done to surmount human fears as much as possible; and it is believed, the errors that may be found in these observations may be rather attributed to the ignorance of the observer, than to any inaccuracy, fear, or scrupulous reflection upon his own situation, though many times it was a dangerous and disagreeable one.

But as these observations have had the advantage of large instruments, as they are made in places where there is no probability they ever will be repeated, Mr Bruce wishes them to be calculated rigorously, and no equation, however trifling, omitted; so that they may be regarded as fixed points in the geography of Africa and Arabia in any future reform of the maps of those countries.

Mr Bruce has calculated always two altitudes, and sometimes more, for ascertaining the time; he has set two altitudes, for the

most part, for fixing the time of the clock at each observation; and he hopes that Mr Maskelyne will, as he was so good as to promise him, bestow the same attention upon these now sent him, upon the result of which he shall place his greatest confidence; and he hopes Mr Maskelyne will favour him with all correspondent observations made at Greenwich, from the meridian of which he would wish his longitudes to be calculated.

At Negade.

30
2 30
2 48

L. 32 32 48

On the 11th of January, 1769, lat 25° 53' 30" N. by esteem 2 hours E. from Greenwich, observed an immersion of the 1st satellite of Jupiter, when it was 5 h. 41' 34" by the clock.

Arcturus.	Pendulum.	Barom	Therm.	
64 44 30	4 41 54	27 6 9	56⅔	Clear and calm
76 26	4 53 54			obs. good.

Jan. 10. - 17 45 17 Appar. time.

By obs. of March 29, at Greenw. should happen at 15 36 6

2 10 11 Long. E of Greenw.

Apparent time computed.

Jan. 10. 16 45 35.9
16 57 39.1

For App. time, { 3 41.9 / 3 45.1

Mean, 3 43 5 slow

Long. 32 15 45

At Bajoura.

On the 27th Jan. 1769, in Lat. 27. 3. 17. long. by esteem, 2 hours E. from Greenwich, observed an eclipse of the first satellite of Jupiter at 3 h. 51. 13. by the clock.

Arcturus.	Pendulum.	Barom.	Therm.	
74 57 20	4 22 34	27 8 7	47	Clear and se-
76 7 30	4 28 5			rene, obs. good,

Barometer 20 feet above the level.

Jan. 26. 15. 53 14 Apparent time
By obs. of March 29. should happen at Greenw. 13 44 51

Diff. of Mer. E. of Greenwich, 2 8 23

Jan. 26. 16 24 34 2 Apparent time computed
16 30 5.9
Clock sl { 2 0.2
2 0.9
Mean, 2 1

At same place, Jan. 31. 1769, observed an eclipse of the second satellite of Jupiter, at 3 h. 2. 19. by the clock, with Adam's Telescope.

Arcturus.	Pendulum.	Barom.	Therm.	
66 34 50	3 25 15	27 7	53	Hazy; thin clear
69 36 5	3 38 52			clouds; observ.

doubtful: Dogs inquieted me all the time of the observation.

Jan. 30. 15 6 58 Apparent time.
By obs. of March 10. 13 0 12

Long. 2 6 46 E.
Jan. 30. 15 29 53.4
15 43 31.2
By mean of 2 Alt { 4 38.4
4 39.2
Mean, 4 39 slow.

At same place, Feb. 12, 1769. observed an eclipse of the first satellite of Jupiter, when it was 2 h. 3. 44. by the clock, with Short's telescope

Arcturus.	Pendulum.	Barom.	Therm.	
67 2 30	2. 42 33	27 5 7	57	Many thin clouds
69 55 10	2 55 32			

Feb. 11 14 5 16 Apparent time.
Mar. 29. 11 58 2 at Greenw.

Long. 2 7 14 E.
2 8 23 by immer. of 26.

} I reject the result 2. 6 46. from the immer. of the 2d Sat. on the 30th, as less to be depended on.

Mean, 2 6 48

Feb. 11. 14 44 3.9 Apparent time computed.
14 57 4.4
Clock slow, { 1 30.9
1 32.4
Mean, 1 32

On the 5th April, 1769, Lat. 26. 7. 51 same esteemed Long. as before, observed an eclipse of the second satellite of Jupiter at 2 h. 31. 20 by the clock.

At Cosseir.

Lucida Lyrae.	Pendulum.	Barom	Therm.	
51 34 40	2 38 6	27 9 6	66	Clear, calm af-
+54 13 10	2 51 36			ter a high wind
55 29 20	2 58 11			

Altit. of Arcturus found in the orig. Journals,

61 38 40	3 9 13	
59 66 0	3 16 49	
56 24 40	3 32 29	

	Apparent time		
April 4.	14 37 50.0	— 0 14	for clock. f.
	14 57 58.9		
Clock {	0 16.0	14 31 6	Ap. time.
	0 12.1	12 14 49	Ap. time by an obs. of
Mean,	0 14 fast.		April 11.
		2 16 7	Long. E. of Greenwich.

On the 22d April, 1769, lat. 24. 3' 35. long. by esteem $2\frac{1}{2}$ h. east from Greenwich, observed an eclipse of the second satellite of Jupiter, with the same telescope, at 9 h. 14. 17. by the clock.

At Imbo in Arabia.

Arcturus.	Pendulum.	Barom.	Thermom.	
53 13 4	9 23 9	27 7	$73\frac{1}{4}$	Brisk wind
55 40 40	9 33 48			N. W. and clear.

The altitudes of Arcturus in the Journal. are as follows:

53 13 40	9 23 9
54 18 10	9 27 49
55 40 40	9 33 48
+	0 48 for clock slow.
App. t.	9 15 5
By observ. of long. May 6.	6 41 59 at Greenw.
Long.	2 33 6 E of Greenw.

* This marks the additional altitude found in the Journals, but not in the copy sent to Dr Maskelyne.—E.

On the 23d April 1769 at same place, observed an eclipse of the first satellite of Jupiter, when it was 9 h. 3. 9. 29. by the clock.

Arcturus.	Pendulum.	Barom.	Therm.	
+59 15 50	9 44 56			There was a brisk
60 42 10	9 51 11	27 4 8	82	wind W. by N.;
62 4 40	9 57 12			The telescope was

Dollond's, and shook with the wind: I cannot think it affected the observation.

In these, time of eclipse by clock, 9 39 29
Clock slow, 1 37

True time of eclipse, 9 41 6
Time of ecl. by ephemerides, corrected by the tables, 7 18 55

Diff. of Paris, 2 22 11
Apparent time computed, 9 54 17.9
Clock { 6 9 / 1 41.4
2 24 slow.

+ 2 24

Apparent time, 9 41 53
By obs. of April 28. 7 8 47 at Greenw. which agrees exactly with that from immers. of 2d sat.
Long. 2 33 6 E. April 22,

On the morning of the 8th of May 1769, lat. 21. 28. 1. by esteem, as before, 2½ h. E. of Greenwich, observed an eclipse of the first satellite of Jupiter, when it was 1 h. 34. 42. by the clock.

Jidda.

Arcturus.	Pendulum.	Barom.	Therm.	
53 3 10	1 42 20			It was here I fill-
+52 16 10	1 45 20	26 5 7	84	ed my barometer
50 58 15	1 51 19			with the heavy

mercury mentioned before. The satellite was too near Jupiter's limb; with a calm, but a violent dew. Changed our quicksilver in the barometer. Observation doubtful.

Apparent time, May 7th, 13 43 25.0
13 52 23.4
Clock slow, { 1 5.0 / 1 4.4
Mean, 1 5 slow.

+ 1 5 for clock slow.

May 7th, 13 35 47
By obs. of April 28th, 10 59 8

Long. 2 36 39 E.

At same place, 9th May 1769, supposed long. as before, observed an emersion of the first satellite, when it was 10 h. 11. 14. by the clock.

Regulus.	Pendulum.	Barom.	Therm.	
37 38 40	10 22 44			Haze and va-
+36 42 10	10 26 45	26 4 9	83½	pours. Calm.
35 52 35	10 30 17			

App. time comp. May 9th, 10 26 2.3
10 33 37.4
Clock slow { 3 18.3 / 3 20.4
Mean, 3 19 slow.
10 11 14
+ 3 19 for clock slow.

10 11 33
By obs. of March 16th, 7 37 38 at Greenw.

Long. 2 36 55

At same place, 24th June 1769, observed an emersion of the first satellite of Jupiter, when it was 10 h. 33 5. by the clock.

Lucida Aquilae.	Pendulum.	Barom.	Therm.	
38 36	9 56 38	25 8	91	Hazy in the ho-
44 1 30	10 20 9			rizon. Calm.

Between these two alt. the Journal has 39 58 30 and 10 2 35
42 2 20 10 11 29

Apparent time, 9 58 1.1
10 21 31.1
Clock slow, { 1 23.1 / 1 22.2
Mean, 1 23 slow.
10 33 5
+ 1 23

10 34 28
From obs. of July 10th, 7 56 45 at Greenw.

Long. 2 37 43 E.

At same place, 2d July 1769, observed an emersion of the 1st satellite of Jupiter, when it was 0 h. 27. 18. by the clock.

Pegasus.	Pendulum.	Barom.	Therm.	
40 47 45	12 43 33			Cloudy in the
+45 11 20	13 2 26	25 11 6	83	horizon.
46 13 0	13 6 49			

Long. by obs. May 7th, 2 36 39
May 9th, 2 36 55
June 24th 2 37 43
July 2d, 2 37 12

Mean, 2 3 7.7 E.

Apparent time, July 1st, 12 43 52.0
13 7 6 9
Clock slow, { 0 19 0
0 17.9
Mean, 0 18 slow.
0 27 18
+ 0 18

12 27 36
From obs. of July 1st, 9 50 24

Long. 2 37 12 E.

On 26th July 1769, in lat. 15. 40. 52. observed an emersion of the 1st satellite of Jupiter, when it was by the clock 7 h. 15. 18.

Loheia.

Lucida Aquilæ.	Pendulum.	Barom.	Therm.	
38 7 20	7 37 16			Quick flying
+39 57 15	7 41 51	26 3 7	93	clouds. Obs.
41 7 40	7 49 41			were taken in

the breaking up of those clouds, but were tolerably favourable.

Apparent time,	7 44 22 3	7 15 18
	7 56 50.9	+ 7 8
Clock slow,	7 6.3	7 22 26
	7 9.9	
Mean, 7 8 slow.	By obs. July 1.	4 30 56

Long. 2 51 30 E.

At same place, 18th August 1769, observed an emersion of the first satellite of Jupiter, when it was 7 h. 26. 42. by the clock.

Arcturus.	Pendulum.	Barom.	Therm.	
38 56 20	7 34 12			Calm ; clear
+38 0 0	7 38 11	26 4 6	88	observation,
37 15 0	7 41 24			as favourable

as possible; but I was feverish and ill, having for near a month past constantly watched the comet that appeared at this time.

Long. July 26.	2 51 30	Apparent time,	7 47 21.1
Aug. 18.	2 51 53		7 54 33.7
Mean.	2 51 41	Clock.	13 9.1
			13 9.7
			13 9 slow.
			7 26 42
			13 9
Apparent time,			7 39 51
By obs. July 1.			4 47 58
Long.			2 51 53 E.

On the 22d September, lat. 15. 35. 5. long. by esteem 2 h. 42. 5 from Greenwich, observed an emersion of the second satellite of Jupiter, when it was 7. 16. 38. by the clock.

Masuah.

α in Pegasus wing.	Pendulum.	Barom.	Therm.	
40 44 30	7 29 23	25 3 9	91	Cloudy and
44 23 50	7 43 19			calm. Ba-

rometer 20 feet above the level.

Between these two, in the Journal.	Apparent time computed.
41 56 10	7 33 2	7 29 25.0
43 7	7 37 58	7 44 37.3
Clock slow.	0 2.0
	1 18 3
Mean,	0 40 slow.
	7 16 38
	+ 0 40
Apparent time of eclipse,	7 17 18
Ditto, computed for meridian of Greenwich, by new tables in Nautical Almanack of 1779, which agree in the observations made in 1769, See Tables, p. 25.	4 38 52
	2 38 26 E.

On the 23d of January 1770, in the morning, in lat. 14. 4 35. N., long. 2 h. E. from Greenwich, observed an eclipse of the first satellite of Jupiter, when it was 5 h. 25. 37. by the clock.

On the extremity of the country of Sire.—Three hundred paces to the S.S.E. was the village Adello; and two hundred distant from the church of Zaselasse, or the Trinity.

Regulus.	Pendulum.	Barom.	Therm.	
32 21 45	5 33 47			There were vapours,
+ 31 47 45	5 36 11.			and some clouds.
31 16 25	5 38 20			

In the original Journal, additional to the altitudes.

Antaris.

37 47 30	5 43 22		
39 7 45	5 45 4		
Apparent time computed.		5 25 37	
17 30 17.6		2 49 cl. fast	
17 36 11.5			
Clock fast. { 3 29.4	Apparent time.	17 22 48	
{ 2 8.5	From obs. of Mar. 16.	14 50 47	
Mean, 2 49 fast.		2 32 10 E. lon.	

On the first February 1770, in the morning, observed an immersion of the second satellite of Jupiter, in lat. 13. 24. 56. and esteemed long. 2 h. east of Greenwich, when it was 4 h. 38. 28. by the clock.

At Addergey, beside the river Mai Lumi.

Regulus.	Pendulum.	Barom.	Therm.	
33 77	4 49 8			Thin flying clouds.
+ 32 32 30	4 52 13			
31 47 20	4 55 21			

Apparent time calculated.—16 50 25.5
16 56 36.4
Clock slow. { 1 17.4
{ 1 15.4
Mean, 1 16 slow.
4 38 28
+ 1 16 cl. slow.

Jan. 31. 16 39 44
By observation of June 1st, at Greenwich, 14 7 56

Long. 2 31 48 E.

On the 3d March 1770, in the morning, in lat. 12. 34. 30. N. esteemed long. 2 h. E. of Greenwich, observed an immersion of the first satellite of Jupiter, when it was 3 h. 53. 15. by the clock. (Gondar, 100 paces W. of Kedus Michael church.)

Lion's Tail (β)	Pendulum.	Barom.	Therm.	
42 59 40	4 7 38			Clear and calm.
+ 42 3 0	4 10 9	21 6	69	
41 12 0	4 13 41			

Apparent time computed.

15 56 52.6
16 2 56.9

Clock fast. { 10 44.1 / 10 45

	3 53 15
	— 10 45
App. time, March 2.	15 42 30
By obs. of March 16.	13 12 38
Long.	2 29 52 E.

On the 5th March 1770, in the morning, at same place, observed an immersion of the second satellite of Jupiter, when it was 4 h. 20. 55. by the clock.

Lion's tail, β.	Pendulum.	Barom.	Therm.	
32 35 40	4 31 52			Clear and calm.
+ 32 4 20	4 34 8	21 6 3	63	
31 27 15	4 36 45			

Apparent time computed.

16 31 19.8
16 36 4.8

Clock fast. { 0 32.2 / 0 40.2

Mean, 0 36

	4 20 55
	— 0 36
By observation of March 4.	16 20 19
By observation of June 1. at Greenwich,	13 51 6
Long.	2 29 13 E.

At same place, 10th March 1770, observed an immersion of the first satellite of Jupiter, when it was 5 h. 36. 37. by the clock.

Lucida Aquilæ.	Pendulum.	Barom.	Therm.	
42 2 10	5 2 21	21 6 3	60½	Calm and
51 31 35	5 41 12			

Between these, in journal.

42 43 50	5 5 11
43 19 15	5 7 35

Apparent time computed.

17 3 3.3
17 41 [illegible]

Clock slow. { 0 42.3 / 0 40.7

Mean, 0 41

	5 36 37	
	+ 0 41	
March 9. Greenwich,	17 37 18	
	15 7 23	by obs. of March 16.
Long.	2 29 55 E.	

At the same place, 11th March 1770, observed an immersion of the third Satellite of Jupiter, when it was 1 h. 35. 14. by the clock.

Lucida Aquilæ.	Pendulum.	Barom.	Therm.
27 41 0	3 59 43		Perfectly clear.
28 26 0	4 2 44	21 5 7	68½
29 7 45	4 5 34		

Apparent time computed.

	16 0 38.0
	16 6 33.4
Clock slow,	0 55.0
	0 59.4
Mean,	0 57.

	1 35 14
	+ 0 57
March 10th,	13 36 11
Do. at Greenw.	11 4 37 by obs. of April 29, and new tables,
	inserted in Naut. Alm. of 1771.
Long.	2 31 34 E.

At the same place, 18th March 1770, observed an immersion of the third Satellite of Jupiter, when it was 5 h. 34. 31. by the clock.

Lucida Aquilæ.	Pendulum.	Barom.	Therm.
39 10 30	4 21 21		Thin vapours.
+ 39 59 20	4 24 41	21 6 4	60
40 54 10	4 28 26		

Apparent time computed.

	16 22 10.9
	16 29 15
	0 49.9
	0 49
Mean,	0 49 slow.

5 34 31
+ 0 49

March 17th, 17 35 20 apparent time.
Do. at Greenw. 15 6 49 by obs. April 29th, and new tables annexed to Naut. Alm. of 1771.
Long. 2 28 31 E.

At the same place, lat. and esteemed long. as before, on the 26th March 1770, in the morning, observed an immersion of the first satellite of Jupiter when it was 3 h. 53. 27. by the clock.

Lucida Aquilæ.	Pendulum.	Barom.	Therm.	
45 26 50	4 15 32			Thin clouds; it
+ 46 12 50	4 18 53	21 6	63	lightens much to
46 55 45	4 21 35			the south, little wind.

Apparent time computed.
16 18 50.5
16 24 52.3
$\int$ 3 18.5
$\wr$ 3 17.3
Mean, 3 18 slow.

3 53 27
+3 18

March 25th, 15 56 45
Ditto, at 13 26 33 Greenwich, by observation March 16th.

Long. 2 30 12 E.

By March 2d, Im. 1. 2 29 52
4th, Im. 2. 2 29 13
9th, Im. 1. 2 29 55
10th, Im. 3. 2 31 34
17th, Im. 3. 2 28 31
25th, Im. 1. 2 30 12

Mean of all, - - 2 29 53
Mean of three imm. of the first, to be preferred, - - 2 30 0

On the 23d April 1770, in the morning, in lat. 12. 12. 38. N. long. by esteem 2 h. E. of Greenwich, observed an immersion of the third satellite of Jupiter, when it was 1 h. 34. 11. by the clock. (Emfrus.)

Spica virginus.	Pendulum.	Barom.	Therm.	
45 8 30	1 47 27			Thin clouds; near-
+ 44 21 50	1 51 0	22	70½	ly calm.
43 38 45	1 54 18			

Apparent time computed.

13 47 47.8
13 54 39.9
Clock slow, { 0 26.8 / 0 21.9
Mean, 0 21

1 34 11
+ 0 21

April 22d, 13 34 32
Do. at Greenw. 11 3 47 by obs. of April 29th, and new tables annexed to N. Alm. of 1771.
Long. 2 3 45 E.

At same place and same morning, observed an immersion of the third satellite of Jupiter, when it was 3 h. 50. 51. by the clock, regulated as above.

3 50 5
+ 0 21

April 22d, 15 50 26 apparent time.

(I have no observation, made at Greenwich or elsewhere, proper to be compared with this.)

At same place, 27th April 1770, observed an immersion of the first satellite of Jupiter, when it was 0. 35. 50. by the clock.

Regulus.	Pendulum.	Barom.	Therm.
34 34 10	11 26'40		Clear and calm.
+ 33 50 35	11 29 42		
32 47 25	11 34 1		

Apparent time computed.

11 26 50.3
11 34 10.4
0 10.3
9.4
Mean, 0 10

0 35 5
0 10

April 26, 12 35 15 Apparent time.
Do at Greenw. 10 3 57 by obs. of March 27.

Long. 2 30 18 E.

At the same place, May 1. in the morning, observed an immersion of the second satellite of Jupiter, when it was 1h 15. 34. by the clock

Lucida Aquilæ.	Pendulum.	Barom.	Therm.
34 36 25	1 21 14		
35 30 50	1 24 55		
36 50 55	1 30 21		

Apparent time computed.
13 21 57.8
14 31 5 7
Slow { 0 43.8 / 0 44.7
Mean, 0 44

1 15 34
0 44

Ap. 30. 3 16 18 Apparent time.
10 45 44 by obs. of June 4.

Long. 2 33 34 E.
By April 22d Imm. 3d, 2 30 45
25th Imm. 1st, 2 30 18
30th Imm. 2d, 2 30 34

Mean, 2 30 34 E.

On the 27th of May, 1772, in lat. 1 3 34. 36. N. by esteem 2 hours E. from Greenwich (Sennaar) observed an eclipse of the second satellite of Jupiter, when it was 1 h. 19. 15. by the clock.

1 19 15
May 26. 0 22 for clock slow.

13 19 37 Apparent time.
11 6 14 do at Greenwich by obs. of June 2.

Long. 2 13 23 E.

And on the same day and place observed an immersion of the 1st satellite of Jupiter, when it was 1 h. 26. 30. by the clock.

Altitude of Arcturus	Pendulum.
31 41 30	1 51 40
29 1	2 2 49
1 26 30	
0 22	

13 26 51 Apparent time.
11 12 31 by obs. of June 9.
Long. 2 14 21 E.

Apparent time computed.
13 51 54.3
14 3 19.5
Clock slow, { 0 14.3 / 0 30.5
Mean, 0 22 slow.

	Hours.
By Imm. 2d.	2 23 23
By Imm. 1st.	6 14 21
But the proper mean allowing twice as much to the first satellite as to the second is - -	2 14 52E.
	2 14 2E.

On the 27th September, in lat. 15. 45. 54 long. by esteem 2 h. E. of Greenwich (Halfaia) observed an immersion (in one of the journals, emersion of the first satellite of Jupiter, when it was 1h. 7 25. by the clock.

Altitude of Aldebaran.	Pendulum.
48 54 40 (in Journal I think marked 20,	1 16 50
51 23 30 but this uncertain.)	1 25 13

Apparent time computed.
13 12 3.7
13 22 24.9
Fast, { 3 45.3 / 2 48.1
Mean, clock, 3 17 Fast.
1 7 25 by the clock.
3 17 clock fast.

13 4 8 Apparent time.
Do. at Greenw. 10 52 5 By observation corresponding.

Long. 2 11 17 E.

Just before the observation, the thunder beat in the far side of the room, and covered us with dust; excepting this the observation was good.

The appearance of Aldebaran was very remarkable all the way down the desert. At all times of the night that it appeared, it was in paleness equal to that of the neighbouring stars, which was very different from its colour in the high country, where it was red, little different from its general appearance in Europe.

On the 13th of October 1772, at Chendi, in lat. 16. 38. 37. by esteem. 2 h. E. of Greenwich, observed an immersion of the first satellite of Jupiter, when it was 1 h. 35. 25. (in the journal 5 seconds) by the clock.

Altitude of Aldebaran.	Pendulum.	Therm.	
42 24 25	11 50 39	88	Bright moonshine; perfectly clear and calm—good observation. A large ostrich pecked at my barometer, and broke it.

On the 5th November 1772, at Goos, in lat. 17. 57. 22. by esteem 2 hours E. of Greenwich, observed an immersion of the first satellite of Jupiter, when it was 11 h. 51. 32. by the clock.

Altitude of Betelgueze.	Pendulum.
12 8 31	47 31 0
12 14 19	48 52 20

These, excepting the few which follow, are all the observations of latitude and longitude found in Mr Bruce's journals. Yet a considerable number of both appears to have been made by him, which the editor could not discover among his papers; several loose leaves being lost or mislaid on which they were written. The observations of longitude from January 11 1769, to September 27 1772, were calculated for Mr Bruce by the present astronomer royal, Dr Maskelyne, in the year 1785. These calculations are inserted in the preceding list; for the errors of which, if it have any, the editor solely is responsible. The two observations of the first satellite at Chendi and Gooz were not in the copy transmitted to Dr Maskelyne. In that copy also, two consecutive altitudes of a star were given, by which to correct the clock; but in the journals, three are generally found, and in some instances more. These additional altitudes are inserted with the mark + prefixed to them.

As the observations of both kinds, at Sennaar and down the de-

sert, are very valuable, the following are extracted verbatim from the Journals, in order to shew exactly the state in which they were recorded.

" Elements of an observation of Longitude at Sennaar, May 27, 1772. The latitude of Sennaar is by several observations found 13° 34′ 36″ N. Observed the eclipse of the second sat. at 1 h. 19. 5. by the clock. Observed the immersion of the first sat. of Jupiter at 1. 26. 30. by the clock. Observed two altitudes of Arcturus to correct the time by the clock. Clock, 1. 51. 40. Alt. 31. 41. 30. Clock 2 h. 2. 49 Alt. 29. 1. 0. Right ascens. of Arcturus at Sennaar, May 27. 14 h 5 19. Passage of the meridian, 9 49. 3. Clock slow by the 1st obs. 0. 1. 2.; by the 2d, 0. 1. 16; mean, 0 1. 9. Long. by the 1st sat. 2 h. 4. 59, by the 2d, 2 h. 1. 52, East long. from Paris, the meridian of the ephemerides.

Halfaia, Sunday, September 27, 1772, mid-night, thermometer 83, wind N. at one o'clock morning, cloudy, dark in the west. Rectified the quadrant. Rectified above gives 89. 42. 30 reversed 90. 16. 0. Sun $\frac{179.\ 58.\ 30}{2}$ = 89. 59. 15. The quadrant gives 45″ too little.

Alt. de of Cauda Cygni at Halfaia (this night) 61. 14. 50, to which add 45″ error of the quadrant, the true altitude is 61. 15. 35.

At Halfaia, this Sunday, September 27, at 1 past midnight, the heavens hazy; observed an emersion of the first satellite at 1. 7. 15. by the clock (that is the 28th of September, in the morning). And two altitudes of Aldebaran taken to correct the clock, it was at 1. 15. 50. Alt. 48. 54. 20. At 1. 25. 13. Alt. 51. 23. 30.

Halfaia, Saturday, September 26. observed the sun's meridian. Altitude 73. 7. 30. Subt. refract. 13. and the sun's semid. 16′, 2=72. 50. 25. which, taken from 90, leaves 17. 9. 35 72. 50. 25+decl. 1. 23. 41. = 74. 14. 6. Latitude of Halfaia, 15. 45. 54.

Chendi, October 11. 1772. Observed the meridian altitude of Cauda Cygni 62. 13. 45+45 error of the quad. = 62. 14. 30. Thursday, October 15. observed the meridian altitude of the Sun's upper limb, 64. 49. 30+Error of the quad. 45= 64. 50. 15. Same day, observed the meridian altitude of Cauda Cygni 62. 13. 40+45 = to 62. 14. 25. From these the lat. of Chendi comes to be N. L. 16. 42. 43. the difference between which and that of Halfaia, N. L. 15. 43. 49. is 0, 58. 54. so that our course was N. E. and to E. of N. E.; our diff. is near 59

miles, which we have gone north from Halfaia. The Lat. of the city Meroe is 16. 26.

At Chendi this 13th of October observed an emersion of the first satellite of Jupiter, by the clock at 11. 35. 25. Aldebaran, 42. 23. 40. Clock 11. 50. 39. Night perfectly clear. Error of the quadrant to be added to the altitude, viz. 42. 23. 40. + 45. True height, 42. 24. 25 not deducting refraction. Therm. 88. dead calm; cloudy in the horizon to the south; but overhead clear and cloudless; bright moonshine.

Nov. 5 1772 at Goos, 2 h. E. from Greenwich, observed in Lat. 17. 57. 22. an immersion of the first satellite at 11. 54. 32. by the clock.

Betelgueze.	Clock.
12 8 31	47 31 0
12 14 19	48 52 20

The observation at Chiggre has not been found.

At Assouan (Syene) December 8, observed the meridian altitude of the sun's upper limb, 42. 25. 50 + 45. = 42 26. 35. at the Shourbagi's house in the north end of the town, also the meridian altit. of Orion's west shoulder 72. 5. 0. + 45. error of the quadrant = 72 5 45 and the merid. alt. of Orion's east shoulder, 73. 18. 0, or with the 45. added 73. 18 45.

At Syene, Thursday, December 10, observed the merid. Alt. of the Sun's upper limb, 43. 15. 20 + 45 = 43, 16. 5. From this, viz. at the great mosque, to the centre of the old town is three-fourths of a mile, at least 4000 feet.

Dr Maskelyne's note to Mr Bruce respecting the observations calculated by him.

I have placed the apparent times (which I have had carefully computed by two different hands) by the side of the observations; and thence inferred the correction to be applied to the clock; and deduced the apparent time of the immersion, or the emersion of the Satellite; under which I have placed the immersion, or emersion, such as it ought to have been at Greenwich with a similar telescope, as inferred from the nearest observations made at the royal observatory by the help of the Nautical Almanac, except September 22, 1769, where, having had no observations of the

second satellite at Greenwich that year, I inferred the time of the emersion from the late Mr Wargentin's New Tables of the second satellite, (see p. 25. of those tables annexed to the Nautical Almanac of 1779:) and excepting also the emersion of the 3d satellite on March 10. 1759, and April 22, 1770, where I made use of the same Mr Wargentin's New Tables annexed to the Nautical Almanac of 1771, as far more exact than the eclipses calculated in the Nautical Almanac from the former tables, to compare with the immersion of the third satellite which I observed here, April 29, 1770. I have farther taken the proper mean of the several results of the observations made at each place, to determine the true longitude of each place of observation.

Dr Maskelyne's compliments to Mr Bruce; hopes this will answer his purpose, and that he shall have the pleasure of seeing them soon published, together with his other curious remarks and observations made in his travels.

Greenwich, *February* 9, 1785.

DISSERTATION

ON THE

PROGRESSIVE GEOGRAPHY

OF THE

BAHAR-EL-ABIAD,

AND

THE OTHER BRANCHES OF THE NILE.

THE geography of the Nile must have excited the curiosity of the Egyptians at an early period, on account of the inundation of that river, which saves their country from becoming a desert. In very ancient times, however, they seem to have made little progress in tracing the cause of their annual blessing. None of their priests could give Herodotus any information respecting the sources of the river, and what he has collected on the subject is derived from the Cyreneans. A party of Nasamones, an African tribe then dwelling near the larger Syrtis, who had crossed the sandy desert between their own country and the Niger, related, that after they had reached the inhabitable country, the natives, who were small of stature, black, and addicted to magic, led them through very large marshes to a town by which ran a great river from west to east. This river, as is now well known, was the Niger or Joliba,

discovered by Mr Park; the marshes were those which are often mentioned by the Arabian geographers; the natives, who received the Nasamones, were the pagan blacks, now overpowered by the Arabs, in the low country, but still independent in the mountainous districts.

From the time of Herodotus an opinion prevailed very generally, that the Niger and the Nile were the same river. This was firmly maintained by all the ancient writers who followed the reports of the western Africans. Juba (as quoted by Pliny, Hist. Mund. lib. iii. p. 69.) places the fountains of the Nile in a mountain of the inner Mauritania, not far from the (western) ocean, and describes the course of it in such a manner as to leave no doubt that he understood the Niger. A fixed tradition prevails even at this day among the Arabs, that the Niger and Bahar-el-abiad, that is, the most westerly branch of the Nile, have a communication with one another; which has been shewn, by information collected in Dar Fur by Mr Browne, and by the excellent illustrations of Major Rennell, to be altogether improbable.

Most of the rivers which form the Nile, being now known to the world by the labours of Bruce, Browne, and Horneman, it becomes a matter of curiosity to examine the information given by the ancients in this matter, with a view to account for the mistakes into which they are supposed to have led modern travellers, and to ascertain the intrinsic value of what they have written on the subject.

The principal streams which form the Nile, are the Bahar-el-abiad, the sources of which are placed, on the latest authority, by Major Rennel, in about N. L. 7°, and 25°. E. L. from Greenw. It rises from a number of streams in a very mountainous tract called Jibbel Kumri (the lunar mountain), inhabited by a black Pagan nation called Donga. The Arabs, that is the people of Dar Fur, Bornou, and other nations around, never go to that place except for the purpose of taking slaves. The first course of the Bahar-el-abiad, seems to be through mountains, till it reach the plain country not far south of the town El Ais. Mr Browne's accounts shew that the people of Deir and Tuggula, the Tuchawi, the people on the Bahar-

el-ada, and indeed every nation dwelling on the Bahar-el abiad, are independent; which we well know would not have been the case had they lived in a plain country accessible to the Arabs.

As no foreigner, in ancient times, had any inducement to travel into the wild mountainous country of the Donga, it is probable that a fabulous account of the sources of the river, was the sole foundation on which Ptolemy and the Greeks constructed their narratives.

The second river of consequence which forms the Nile, is the Abay or Bahar-el-asrek, that rises in Habbesh, and is sufficiently described in the preceding volumes. The Abay receives a very great number of tributary streams, but as it rises in a more northerly latitude than the Bahar-el-abiad, it sinks in the dry season, while the current of the Bahar-el-abiad remains full and undiminished. It is believed that a considerable river called the Maleg, rising in Narea, falls into the Bahar-el-abiad before its junction with the Abay; and there can be little doubt that a variety of streams increase both these rivers in that dir[illegible] though the geography of the intermediate country is totally unknown.

The third and last river which falls into the Nile, is the Tacazze, which rises in the mountains of Angot, and is increased by the Mareb, the Coror, the Angrab, and the Guangue.

These three rivers, the Mareb, Tacazze, and Abay, were much better known to the ancient Egyptians and Greeks than the Bahar-el-abiad, on account of the commerce which they carried on in the countries along the Arabian Gulf. During the reign of the Ptolemies, several Greeks ascended the Nile as far as Meroe, an island, or rather large district inclosed between the Tacazze and the Nile. The celebrated geographer Eratosthenes seems to have given the first particular account of Meroe*. He had

* Eratosthenes, as quoted by Strabo, gives the following account of the rivers around Meroe. Having described the great turn which the Nile takes to the west, near the modern town of Dongola, he ascends to Meroe

resided there for some time, and relates, that it was formed by the Astaboras and Astapus, two rivers which flowed from the east into the Nile. But that there was another Astapus flowing from some lakes in the south, which nearly made up the straight body of that river. It is now well known that the Tacazze, though it does not rise from a lake, receives the Mareb, which runs through a marsh of large extent, and that the Abay passes through the lake of Dembea, both which circumstances might easily have given rise to the opinion that the Astaboras and Astapus flowed from lakes. From the time of Eratosthenes, it became common to consider the Astapus and Astaboras as the boundaries of Meroe, but great variety of opinion existed with regard to what rivers were called by these names. Though Eratosthenes perhaps understood by his "other Astapus" the Bahar-el-abiad, or largest stream, distinguishing it from the Abay, which succeeding geographers called Astapus, and laid down as arising from the Coloe palus, probably the lake Dembea, [illegible] writers confounded these circumstances. It appears from modern observation, that the Tacazze must have enclosed Meroe on one side, and the united Bahar-el-abiad and Abay on the other, till the Bahar-el-abiad became separate from the Abay, and thence the Abay alone formed the remaining part of the enclosure. Though the name of Astapus was appropriated by later geographers to the river of Habbesh, it was often given to the Nile by those who wrote inattentively, and indeed the words of Strabo, or rather of Eratosthenes, lead to such a confusion.

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itself, in this manner: "There fall into the Nile two rivers running from the east from certain lakes, and these enclose Meroe, a large island. One of these is called the Astaboras, running on the eastern side, and the other the Astapus, which some call the Astosabas. But it is said that there is another running from the south, out of certain lakes, and that this *nearly makes up the straight body of the Nile*, and that the summer rains occasion its overflowing." Vide Strabonis Geog. lib. xvii. vol. ii. p. 113. ed. Wolters ad. Casauboni 3tiam imp. Amstelod. 1707.

At what time the Greek geographers were informed that the Nile rose in the mountains of the moon, is uncertain. This fact was not known long before the age of Ptolemy. The name given at present to these mountains by the Arabs, is Jibbel Kumr or Kumri, a literal translation from the Greek. The Nuba, or Pagan blacks, who have long inhabited this place, worship the moon*; but though the name may be aboriginal, there is great reason to fear that the Arabs derived it from books.

Ptolemy's geography of the Nile † is very interesting, because it seems, in some particulars, to approach nearly to the truth. The substance of it must have been collected from original sources, though, according to the general practice of that writer, he has adapted it to his own theory. His account of the island of Meroe is singular, as well as that of the geographical positions of the sources of the river. He clearly distinguishes the Nile itself, which rises in the mountains of the moon, from the Astapus, or Abay, which flows out of the lake

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* Vide Vol. VI. p. 345.

† "Hence [from about E. Long. 62 and N. L. 17.] Meroe receives its insular form, from the Nile running on the west of it, and by the river Astaboras on the east. In it are the cities Meroe, E. Long. 61. 30. N. Lat. 16. 30. Sacoloche, Long. 61. 44. Lat. 15. 15. Eser, Long. 62. 40. Lat. 13. 30. Daron, Long. 62. Lat. 12. 30. [These positions are from the Latin translation, which is ancient, and of some authority, the Greek being confused here.] Then the conjunction of the river Nile and the Astapus, the position of which is E. Long. 61. N. L. 12. Then the conjunction of the Astaboras and the Astapus. E. Long. 62. 30. N. Lat. [Greek] 12, or [Latin translation] 11. 30. Then where the Nile becomes one by the junction of the two rivers from the lakes to the south. E. Long. 62. [Greek] or 60. [translation] and south lat. 2. The most westerly lake is in Long. 57. and South Lat. 6. the most easterly is in Long. 63. S. Lat. 7. The lake of Coloe, from which flows the Astapus, is in Long. 60. under the equator. The cities at a distance from the river, inland, are Auxume, in which is a palace, Long. 65. 30. N. L. 11. &c. &c." Vide Ptol. apud. Bern. Theat. Geo. Vect. tom I. p. 180. Perhaps, instead of the conjunction of the Astaboras and Astapus, Ptolemy wrote, the conjunction of the Astosabes and Astapus, and meant by the former, the Rahad, the Dender, or some river which falls into the Abay.

of Coloe, or Dembea, and from the Astaboras, or Tacazze, which rises in Angot.

He correctly describes Meroe, as surrounded on the north by the junction of the Nile and Astaboras, and then relates the junction of the Astapus and Nile on the south west side of it; but unfortunately, having made the Astaboras fall into the Astapus, a considerable way above the junction of the latter with the Nile, he is obliged, after having allowed them to run together for many miles, to separate them again, and to send the Astapus into the Nile, and the Astaboras down the eastern side of Meroe*. It is evident, from modern observation, that the Tacazze never fell into the Abay; and this error of Ptolemy must have been occasioned by misinformation, a desire to make Meroe a complete island, or inattention to the authorities before him.

His next position worthy of notice, is that of the mountains of the moon, which he places beyond the Line in S. Lat. 12. 30. and long. 57°. He describes these as a range [illegible] from west to east, out of which flow a number of torrents, occasioned by the melting of snow, into two lakes, 8 degrees distant from one another." From the two lakes issue two rivers, that join in S. Lat. 2° and East long. 62. and form the Nile. It is obvious, that Ptolemy's information respecting these matters, must have been very inaccurate. His geographical position of the mountains is erroneous by more than 19° of latitude; which, considering his imperfect mode of calculation, ought not to be mentioned, if this false position of Jibbel Kumr, had not been servilely copied by all the Arabian geographers. It may be further observed, that the increase of the Nile arises from the tropical rains, not from the melting of snow in these mountains; that the existence of these lakes is not confirmed by what is known of the course of the Bahar-el Abiad, which runs through a hilly country; and that the improbable distance between them, amounting to 480 miles, shews that little dependence can be placed on any part of the account.

* Cl. Ptolem. Geog. Lib. IV. C. 8. apud Bertii Theat. Geo. Vet. tom. 1. p. 129.

On the contrary, there is great reason to suspect, that his informers drew their circumstances from the history of the Astaboras and Astapus, with which they were better acquainted. It was a general opinion, before the time of Ptolemy, that the Nile rose from marshes not far from the Indian ocean. Alexander the Great imagined that he had discovered its source in India, and even prepared to act on that supposition. The Mareb passes through marshes before it joins the Tacazze, and the Abay, or Astapus, crosses the lake of Dembea. The Maleg also, which Mr Bruce mistook for the Bahar-el-Abiad, is said to rise in the marshes of Narea. Many of these facts might, and indeed must, have been known to merchants who regularly traded along the Arabian Gulf, but who could have no opportunity of visiting the mountains of the moon. The Abay, under the name of Astapus, seems to have been often mistaken for the Nile. Ptolemy actually places the sources of the Nile in the Regio Cinnamomofera, or spice country, as others had done before him. But that region is generally allowed to have been situated at no great distance from the straits of the Indian ocean, and can with no propriety be placed near the real source of the Bahar-el-Abiad. From all of which circumstances, it would seem, that Ptolemy's informers described the Abay, or the Maleg, not the river which rises in the country of Donga.

After the conversion of the Axumites or Abyssinians, to the Christian religion, access to their country became more easy, and continued without interruption till the conquest of Egypt by the Arabs. The Egyptian priests collected many fables respecting the Nile at Axum, and other places, which they related to their conquerors, when these became inclined to study and literature.

On the revival of learning in the east, the Arabs translated most of the Greek geographers into their own language, and eagerly adopted their systems. They supposed the earth to be encircled with a dark ocean, called the Bahar mohit, the shore of which was guarded by a mountainous ridge called Caf, and they modelled their divisions of the land and water, exactly on the plan of Ptolemy. They were not remiss in procuring information with respect to places, but

as no traveller ever visited the source of the Bahar-el-Abiad, they contented themselves with the fables of the Egyptian priests, whom they consulted on doubtful occasions, and from whom they adopted a multitude of ridiculous fictions. Of the numerous Arabic writers on geography, very few are original. This may be easily discovered by consulting Edrisi, Abulfeda, Ibn el Wardi, or Soyouti: but notwithstanding this imperfection, they often contain valuable notices. On the geography of the Nile, they afford no certain intelligence. The following account of the sources of that river is given by Edrisi, one of the most respectable Arabic geographers, who seems to have borrowed it from an older writer, that had derived his information from the Coptic priests in Egypt.

"In this same part, (the fourth part of the first climate) is seen the separation of the two Niles, viz. the Nile of Egypt, which passes through our country, flowing from S. to N. on the sides and islands of which are situated most of the Egyptian towns. Next, the other part of the Nile, which [illegible] from the east to the farthest bounds of the west, along which part are situated all, or most of the regions of Soudân (Nigritia). These two parts of the Nile arise from Jibel el Kumr, the mountain of the moon, which is sixteen degrees beyond the equinoctial line. The Nile originates in this mountain from ten springs, five of which flow into a great lake, and the rest, from the same mountain, run likewise into another great lake; from each of these lakes run three rivers, which all meeting together, make a very large lake, near which is the city called Tunoi, and it is a populous place, and rice is sown near it. On the bank of this lake, is a statue with its hands raised to its breast; he is said to have been a magnah, and to have been a wicked man, for which reason he was so transformed. In the above-mentioned lake, are fishes with heads and bills like birds, and other frightful creatures. This lake is directly under the equinoctial line, and most of the lower part of it is crossed by a mountain, which stretching northward, and turning somewhat to the west, carries off the branch of the Nile that flows into the western countries. This is the Nile of the Negroes, on which most of their regions are situated. On the eastern side of the same mountain flows another branch

of the Nile, which passes through the land of the Nuba, and Egypt * * *. From the foot of Jibbel el Kumr, viz. from that space which is between the ten rivers and the lakes, the Nile flowing N. to the greatest lake, makes a journey of ten stations, and the space which intervenes from east to west between the two small lakes, is six stations.

"There are, besides, three mountains, in the foresaid country, stretching from W. to E., the first of which, being next to Jibbel el Kumr, is called by the Egyptian priests (canahat Mesr) Jibbel Heikel masûr, or the mountain of the painted temple; the second next to this on the N. they call Jibbel addeheb, the mountain of gold, because gold mines are found in it. The third and next to this, with the ground about, they call the land of serpents; for the natives say, that there are in that district very large serpents which kill with their look. There are in the same mountain scorpions as large as birds, of a black colour, whose bite is instantly fatal*."

When Edrisi comes to Habbesh and the Abay, [illegible] which he knew very imperfectly, he describes like Ptolemy, the river of Hal besh as rising beyond the equinoctial line in the farthest bounds of the inhabited country, to the south, and running between W. and N. till it reach the land of the Nuba, where it falls into that branch of the Nile that flows around Ialac. "It is, adds he, a large river, broad, abounding in water, slow-running, and most of the towns of Habbesh stand on its banks.

"Most people, (continues he) who sail on this river, erroneously assert it to be the Nile itself, because they observe that it overflows, increases and decreases in the very same seasons with the Nile. Yet though they discover the forementioned qualities of the Nile in this river, in the same time and manner, they are wrong in not making a distinction between the two. My opinion that it is not the Nile, is confirmed by what is written in the books on that subject, and by the things which are mentioned respecting the properties,

* Geogr. Nubien. Latin translation by Gab. Sionita, Paris, 1619, pp. 15. 17. and part of the original of this passage in Kercheri Oed. Aegypt. p. 55. Kircher forged the 10, 11, and last sentences of his Latin translation, in order to support the Jesuits' discovery at Geesh.

the course, and the entrance of this river into the Nile, near the town Jalak. Ptolemy, the Pelusian, relates these things in his book on geography, and Hassan Ibn Almondar, in his book of wonders, when he treats of rivers and their influx."

All the Arabian geographers who have written on the Nile, give more or less of the story of its origin recorded by Edrisi. Some of them are more circumstantial in their accounts, and relate a greater number of fabulous particulars, which were perhaps omitted by his abbreviator; for we have only an abridgement of Edrisi's geographical work. It is indeed obvious, that Hassan Ibn Almondar, or whoever first translated the story into Arabic, derived his information not from the long established caravans that gave the Arabs so much knowledge of the towns on the Niger, but from the Egyptian priests, who knew nothing of the matter. The chief geographical positions are borrowed, with little variation, from Ptolemy. Jibal Kumr, a literal translation of his Ορος της Σελήνης is placed many degrees beyond the equator; the two primary lakes are asserted to be six days journey asunder; the great lake and city of Tumi, said to be exactly under the line, are described in such a manner as to leave no doubt that the whole narrative is a translation of the fables current in Egypt. A curious geographical fragment published by Hudson, in the 4th volume of his Geographi Graeci Minores*, furnishes most ample proof of the great want of originality in all the Arabic writers who describe the sources of the Nile; and presents us with an intermediate edition of Ptolemy's story, greatly enlarged, and nearly such as it appears in the work of Edrisi. The anonymous writer, who, from passages in the fragments seems to have lived perhaps later than Cosmas Indoplaustes, gives the following account. "The fountains of the river Nile have this origin. From the large mountain of the moon, flow eight rivers, four from the western part of the mountain, and four in like manner from the eastern. The order of the

* pp. 38, and 39.

western rivers is as follows: First, on the west side flows the Cherbalas; second, that called Chemset; these two unite at the town Metis, and thence run in one. The third is the Chiagonas; the fourth the Ganbalas. These four running on, fall into a certain lake called the lake of the Cataracts. The other four rivers from the eastern side of the hill have this order. The first, which runs by the land of the Pigmies, is anonymous, the second is likewise so. These two unite, and thenceforth run in one. The third is also anonymous; the fourth and last, towards the east, is called Charalas. These four running on, fall into a certain lake called the lake of Crocodiles.

"The lake of Cataracts then sends out two rivers, which unite at the towns Chiera and Chaza. The lake of Crocodiles also sends out two rivers, which unite at the towns Singos and Abas. Then these two united, and the other two which united at Chaza, having become one in the land of the Elephantophagi, are called the Great River. Between these (the two principal branches) are the Cinnamon-bearing country and the Pygmies. And the Great River, flowing on, reaches the Champesidae. There it is joined by the river flowing from Kole, or the Colean lake, called the Astapus. The river, called Astaboras, itself a large one, is united to the Astapus, in the country of the Axumites, before joining the Great River. Between the Astaboras and the Astapus live the Ostrich-eaters. Then the Astapus and Astaboras, having been united in the Axumite territory, join the Great River, in their united state, in the country of the Macrobii. Then they (the Great River, and these joined to it) divide into two, and the Great River, running to the west, receives into its stream another river, called Galbachi, flowing from the lake Psebole. But the Astapus and Astaboras, running in one on the east, mix again with the Great River, which, with them, encloses a large island, called Meroe, nearly equal to the Peloponnessus. The Nile, thence, running in one, with windings, falls into the great sea, that is at the Pharos, by seven months."

From the minute information pretended to be given in this account, we would be led to suppose, that the writer was thoroughly acquainted with every part of the Nile, were it not certain that most of the names which he mentions are

fictitious, and the greater part of his detail apparently false. He makes eight streams issue from the mountain (four from each side), which fall into two lakes. The Arabian geographers make ten of these fall into two lakes; but they differ from the Greek writer in the particular of the large lake of Tuni, which, along with the wonders that it contains, is an Egyptian fable of later date. The Greek writer makes the Astaboras and Astapus join in the country of the Axumites: but it is evident that the Astapus and Astaboras (the Abay and Tacazze) never join in that country, and that the only rivers which could have led him into such a mistake are the Tacazze and Mareb, or more probably the Angrab and Guangue, which join the Tacazze below Abyssinia.

On the whole, therefore, it appears from what has been quoted and remarked, and indeed from every other passage in the Greek and Roman geographical writers, that they knew only a single fact respecting the source of the Nile, viz. that of its rising in the mountains of the moon. The numerous rivers and lakes, which they mention, are not, as far as we know, found in any part of the course of the Bahar-el-Abiad*; and it is more than probable, that these circumstances were either borrowed from the geography of the Abyssinian rivers, or invented to conceal the ignorance of the writers.

It also appears, that little dependance ought to be placed on the testimony or accounts of the Arabian geographers on this subject, because they derived their information not from travellers, but from Ptolemy and the Coptic priests, whose narrative they copied in a servile manner.

Edrisi was induced by the authority of Ptolemy and his translators to assert, that the river of Habbesh was not the true Nile. But although he gives his reasons for doing so, his words indicate that most of the people who lived near it, considered it to be the Nile, an opinion which prevails in Abyssinia and Atbara at this very day. Mela, Pliny, Solinus, and even Strabo himself seem to have believed, that the Astapus constituted the straight body of the river, though it

* Vide Browne's Travels in Africa, Appendix, No. 2, p. 451—479.

may be supposed that the last of these writers applied this denomination to the Nile and Astapus, *united*, on the western side of Meroe. However that may be, the opinion, alluded to by Edrisi, is very ancient and general. The Abyssinians have long considered the Abay as the river which waters Egypt, and have asserted this in so confident a manner as to mislead all Europeans, who have visited their country. The Jesuits and Portuguese, who entered Habbesh in the sixteenth and seventeenth centuries, returned with an account of their having discovered the sources of the Nile, and their pretensions were generally admitted by the literary world *. When Mr Bruce left Europe, it was almost universally believed that the Nile rose in Habbesh; he was confirmed in that opinion by the Abyssinians, and particularly by the people of Atbara and Nubia, who seem to consider the Abay, or Bahar-el-Asrek, as the straight branch of the Nile, and the Bahar-el-Abiad, though a much larger river, as only an accessary stream. He, indeed, mistook the true course of the Bahar-el-Abiad, by confounding it with the Maleg, and by supposing that it rose in the marshes of Narea. But as he had never travelled in the country west of Sennaar, he cannot be much blamed for not understanding the geography of it, which was then nearly unknown. The learned M. d'Anville alone had published a dissertation on the Nile, in which he followed Ptolemy and the Arabian geographers; but the authority of these writers is respectable only in a total scarcity of other information.

It appears, from Mr Bruce's journals, that the Abay was accounted the Nile in Atbara, and that the united river, after receiving the Bahar-el-Abiad, was still called the Bahar-el-Asrek, a name appropriated by the river of Habbesh.

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* Vide Alvarez. Viag. nella Ethiop. folio 272. Paez apud Kircher; Lobo ap. Le Grande; and all the writings of the Jesuits which mention the subject of the origin of the Nile. Their opinion was widely propagated by Ludolf, on the authority of the monk Gregory, and other Abyssinians. Lobo's account was early translated into English, at the desire of some members of the Royal Society. The learned professor Michaelis of Gottingen maintains the same opinion in his Spicilegia Geo. Sac. *passim*.

Mr Bruce readily acknowledges the superior size of the Bahar-el-Abiad, but never seems to have suspected that it was the Nile. The accusation which has been brought against him by some literary men, of having wilfully, and through vanity, confounded the Bahar-el-Abiab and Maleg, is malicious and unjust. The Bahar-el-Abiab has been discovered to be a principal branch of the Nile, since Mr Bruce wrote: he had never travelled in the country in which it rises, and what he knew of its course was related by ignorant negroes. He was well aware of its importance as a branch of the river; but he trusted to the information of the inhabitants of Habbesh and Atbara, who did not acknowledge it to be the Nile. If, on returning to Europe, he was told that the Bahar-el-Abiad was the true Nile, on the authority of Herodotus, Ptolemy, and the Arabian geographers, he may surely be excused for having erroneously followed the scanty light of his own knowledge, instead of assenting to an opinion which depended on no better foundation than the reports of a few ancient writers, who were not certain of the truth of their own accounts. Striking instances occur in our own country, of rivers being named from the inferior source. The largest river in Scotland is formed by the Teith and the Forth, the latter of which is a stream as much inferior to the former as the Bahar-el-Asrek is to the Bahar-el-Abiad. The inferior stream, however, in spite of the decision of several respectable writers in favour of the Teith, obtains the name of the great river, because it runs in the same line. Although, as Major Rennel observes, the Bahar-el-Abiad deviates very little upon the whole from the meridian, it may, nevertheless, seem *to fall into* the Abay, and from the form of the junction, lose, among the names of Atbara, the honour of being reputed the most celebrated river in the world.

ACCOUNT

OF THE

Ethiopic MSS. from which Mr Bruce composed the History of Abyssinia, comprised in the Fifth Book of the Travels. Vol. III. p. 425.—Vol. IV. p. 200.

THE materials for the life of Facilidas, who reigned 33 years, are contained in two leaves of the MS. Chronicle, No. 5. mentioned in Vol. I. These exhibit merely an abridgement of the great Chronicle, written by his historiographer, which seems to be now lost. The epitome is minute, and runs in the form of annals, so that the principal events of each year are related.

The history of his son Hannes I. is preserved, in its original prolix state, in Vol. III. of the Abyssinian MS. Annals, described in No. 7. of the list of books brought from Habbesh by Mr Bruce; vide Vol. I. of the Travels. Hannes reigned 15 years. The humble exploits of his reign occupy 31 leaves, a much larger extent of parchment than they deserve. He was a religious weak prince, entirely under the government of the clergy. His advancement to the throne was accomplished by the policy of Melea Christos, the Billetana gueta talak of the former king; who, immediately after the death of Facilidas, seized all the other

princes, and sent them to Debra Mutuk, or Wechné. This practice had been long in disuse; and, when renewed, filled the nation with terror. A few months after his coronation, Hannes made his wife, Sabel Wangel, who, like himself, was a bigot, Ieghe. In the same year two Franks (Catholics) were found in the country, who pretended to be Copts sent by the Patriarch of Alexandria; but "the Lord discovered the wolves." One was a layman, and the other a priest, but disguised like his father the devil. They were both executed. Next year a law was passed in full convocation of the king and clergy, ordering the Franks (descenddants of the Portuguese) to conform to the established church; and all other sectaries, such as the Mahometans, and Jews, or Falasha, to live separate from the Christians. Another convocation was held in April following, by which all the nonconforming Franks were driven out of the kingdom, by the way of Sennaar.

The flattery bestowed, by the writer, on the king and queen; the little importance of the incidents; and the prolixity of the narrative, make this performance a very characteristic specimen of monkish historiography.

The annals of Yasous Tallak occupy the greater part of the fourth volume of the MSS. described No. 9. in p. 408. of Vol. II. of the Travels. This was a gallant and warlike prince, whose life well deserved a historian. It was spent in constant wars with the enemies of his country, and in contests with the clergy, who disturbed his whole reign, and abetted the revolt of his son, in consequence of which he was dethroned and murdered. The volume contains 108 folia, of which not above 10 relate to his son Teclahaimanout, Tiflis, Oustas the usurper, and David IX. the other kings whose history is bound up with that of Yasous. The annals of Yasous are written on very thick dark coloured parchment, in a strong coarse hand, with blacker ink than is used in any of the preceding volumes. The beginning of each year is distinguished by writing with red ink, according to the Abyssinian practice. This Tarikh, or history, was copied for Mr Bruce by the scribes of Adowa in Tigre.

The information given in these annals is minute and ex-

tensive. Every remarkable incident, which happened throughout the year, is mentioned, particularly in the early part of the king's reign. Less care seems to have been bestowed on the latter part, which was disastrous and sorrowful. The king appears to have been seized with a deep melancholy after the loss of his mistress Ozoro Keduste, which made him altogether careless about life and fame, and so neglectful of public affairs, as to allow every kind of conspiracy to be formed against him with impunity. Yasous reigned about 24 years, the first seventeen of which were recorded by his historiographer Azage Hawariaxos, who, being a soldier as well as an historian, fell in an expedition which the king made against the Galla in Gooderoo. The royal signet was taken from his finger as he lay on the field, and given to one Abba Zawoldo, who succeeded him in his office.

These persons composed the annals of 20 years of the reign of Yasous; but it would seem, from the abrupt manner in which the narrative is broken off in this copy, that their original MS. extended no further. The remainder of the history of Yasous is in the hand-writing of another person, who was probably engaged by Mr Bruce to supply the deficiency from other chronicles. The accounts of the 23d and 24th years of Yasous, and of the reigns of Teclahaimmanout, Tiflis, Oustas, and David, are indeed exactly the same as those given in the small chronicle, (Vide No. 7. of the MSS. described in Vol. II. of the Travels, p. 408.) and are undoubtedly extracted from it.

There are, therefore, among Mr Bruce's Ethiopic MSS. two copies of the history of the reigns of these forementioned princes; one, in this volume of the annals, and another in the small chronicle. The account is divided into years; and, though evidently an abridgement, is, upon the whole, pretty extensive. It occupies about 10 leaves. The son of Yasous possessed the throne, which he acquired by the murder of his father, only two years and three months. He was crowned at Gondar, Gimbot 1st, A. M. 7198, and assassinated in Agow-midre, Sene 25th 7200. The old king was murdered in the island Tchecla Wunze, Tekemt 5th 7199, or October 1706. Tiflis succeeded to Tecla-

haimanout; and is said, in the letter of Elias Enoch, and in the list of the kings in the chronicle of Axum, to have reigned three years and three months. He died Wednesday 5th Tekemt, A. M. 7204, Oustas, the Ras, occupied the throne, but was deposed, and died on the 16th Yacatit 7208. David died on the 12th of Ginbot, or the 8th of May (not March, as stated by Mr Bruce) 7213, having reigned five years and about three months, calculated after the Abyssinian manner. The whole period of fourteen years, from the death of Yasous till the accession of Bacuffa, was disorderly beyond conception. The reign of Tiflis was very fatal to the murderers of his brother, particularly to the queen and her faction. Oustas ascended the throne in express violation of the laws of the monarchy, and had nearly established a new line of succession. David, the favourite son of Yasous, had a short and bloody reign, the particulars of which are detailed by Mr Bruce. The MS. history of these reigns is perhaps written in a careless manner, but it is extracted from good authorities.

The fifth volume of Abyssinian MS. Annals contains the history of Bacuffa, Yasous II., Joas, and Ras Michael. It consists of 151 folia; 30 of which are on the history of Bacuffa, 73 on that of Yasous II., six on that of Joas, five on the history of Yasous, bound up by mistake among the annals of his son, and 37 on the history of Ras Michael and Joas united. The narrative ends at the death of Joas, in Ginbot 7261 (May 1769). The annals of Bacuffa were written by his two secretaries, excepting a few of the last chapters, which seem to have been composed after that king's death. The history of Yasous begins with a preface, which gives a long account of his mother's family, her marriage with Bacuffa, the birth of her son, and a list of the Kuaragna, her relations. The rebellion in the minority of Yasous is detailed in a prolix manner, and all the monthly appointments at court during that period of his reign. The history of the year, in which the rebellion took place, occupies 17 folia. The writer appears to have been a monk employed by the queen. It is altogether amusing to observe the simplicity of the pious author: His veneration for the king is unbounded, and perpetually prompting him to illustrate the most trifling actions of

his hero by texts of scripture, which give an air of mock dignity to the subject, and have a ridiculous effect on a European reader. Yasous, who was a boy of seven years of age at his accession, frequently amused himself with hunting in the northern parts of his kingdom. In the eighth year of his reign, when he was fifteen years old, he made an excursion to Tcherkin; and, amongst other game, collected a number of apes, which he and his courtiers drove into Gondar, and exhibited in the public square. The historian records this action as follows: "In the eighth year, in the month Yacatit, the king went out to hunt as usual, and found in the way a flock of apes; and he drove them, as a shepherd doth his flock, into Gondar, and put them in the Ashoa. And they who saw that miracle wondered, and were astonished, and said, We have not heard, nor seen, neither have our fathers told us, a sign or a wonder like this. And all that was done by the strength of the Lord."

In the year 7232 (A. D. 1740), the Iteghe celebrated the consecration of her new church on Debra Tsai with great splendour. It was called Koscam, from a place of that name in Egypt, where the holy family took refuge from the persecution of Herod. The number of burnooses, capas, and sacred vestments of all kinds, bestowed on this church was very great; the sacred vessels were of the most valuable kind; and nothing omitted which could add to its riches and dignity. Among the books, great quantities of which were given by the queen, it deserves to be noticed, that no complete copies of the scriptures seem to have made a part of the donation. They were given in separate books, or in volumes, of three or four books bound up together. The apocrypha, Tobit, Judith, Esther, Maccabees, &c. were in equal request with the canonical. Numbers of breviaries, hours, missals, &c. the works of Chrysostom and Cyrillus, the Constitutions, the Hamanout Abou, the Kebu Neguste, and the like, are mentioned.

A. M. 7235, (1743), died Gerasmati Yasous, the queen's second husband, father of Ozoro Esther, Ozoro Welleta Israel, and Ozoro Altash. His mother, Ozoro Welleta Israel, daughter of Yasous the Great, died May. 27, 7232.

She was buried in the church of Gzeir Abbo in Tedda, and he in Koscam.

The celebrated campaign against Semaar was fought in Miaizy 7236. Hamis of Darfoor defeated Ras Welled Ieoul on the Dender, the 3d Miaizy, (April 1744), and took the picture of the crown of thorns, and all the rest of the holy artillery which was carried by the Abyssinian army. Yasous sent Baalomaal Aylo Michael and Gebra Yasous to Gondar, to inform the queen and her mother of his safety. He entered the town Miaizy 13th; and, as his historian says, was reckoned to have been victorious.

Yasous died Sene 21, 7247. As soon as he had expired, the queen ordered Asaleffi Eshte to call her brother Ras Woldo-Ieoul, who entered the palace and found the king dead. The consultation of the queen and Ras is told with great prolixity. He asked her, who, of his three sons, Ayto Adigo, Aylo, and Wayo or Joas, son of Ambet Wobi, daughter of Amito, the Woolo Galla, and sister of Lubo and Dule, the king had named his successor? She answered, that he said, "I am going to die like my fathers and family, from David till this time. Make my son Joas king; for I love him more than my other two sons, as Jacob loved Joseph, and David loved Jonathan more than Abisha and Joab." Having received this information, they assembled the troops, and reported to them the queen's speech. "Your king who loved you, Yasous Adiam Segued, is dead; he who made his voice be heard like the lightning and thunder over the four corners of the world. Now, consult who shall be king over you." They answered, "What has the king said?" "He said," replied the Ras, "that I shall die, for there is none who liveth and doth not taste death." "We shall be scattered," said we, "as sheep." He concluded with these words, "Make my son Joas king, as Joiada did Joas, a child of seven years old."

A minute account of the proclamation follows, and of the oath which the army took to support the young king, and the queen's administration on the *sele quarat rasou*, a picture of our Saviour with the crown of thorns, painted by St Luke.

The Tarikh of Ras Michael, which forms a principal part of the history of the reign of Joas, was transcribed, or perhaps written, for Mr Bruce, at Adowa, by order of Janni, the Ras's deputy-governor. It begins as follows: "We enter on the beginning of the Tarikh of those actions which wonderful power did by the hand of Suhul Michael, for he was sharp (in Abyssinian, suhûl) in obedience to the king, with two mouths: with the one mouth he brought tribute every year, of gold, silver, gunpowder, and gifts of brocade, couches, and furniture for the palace; with the other mouth he ate the flesh of the king's enemies, and tore like a lion, and what was left he trampled under foot." The writer, after a long encomium of this kind, enters into a detail of Michael's predatory war against Woldo Casmati of Enderta, whom he killed in the month of Ter, 7244, (A.D. 1752); then into an account of his promotion at Gondar by Yasous, and of his fidelity till the death of the king. The ornamental parts of this performance are all drawn from scripture; and, like most clerical historians, particularly those of his own country, the author lays on his colours with a liberal hand. Michael came to Gondar immediately after the death of Yasous, and had all his offices confirmed.

The annals of Joas are written in the same minute manner as the other chronicles. A few dates from them may perhaps illustrate the history in Vol. IV.

Sene 30th, A. M. 7248, died Ozoro Wobi, mother to Joas. She was buried at Koscam. Being the daughter of a Galla, her son was attached to that nation which formed a party at court against the Kuaragna, the kindred of the queen; and this circumstance ruined the king.

Tekemt 27th, 7250, died Ozoro Enco, mother of the Iteghe, at an advanced age. Palambaras Eshte buried her in the church of Salus Kedus, the Holy Trinity. Her great-grandson Joas was then 10 years of age.

Sene 20th, same year, the queen gave orders to have the bodies of Bacuffa and Yasous taken out of the vault in the church of Tc la Haimanout near Gondar, and that of her son to be carried to Koscam. On this occasion she gave a

splendid commemoration-feast, which, in Habbesh, is a singular kind of tragi-comedy. The priests and their servants brought out the coffins, and accompanied that of Yasous to the church of Koscam in a long procession, in which they were joined by Ras Welledleoul and all the household troops. The queen and the nobility, both male and female, appeared in public in deep mourning, and uttering shrieks of lamentation. This noisy sorrow pervaded the whole multitude; and the historian says, that the queen wept till she spoiled the beauty of her face. When this paroxysm of national woe was ended, and the ceremony concluded at Koscam, she gave the troops and the people as many cattle, and as much drink, as they were able to finish in the course of the evening. Grief extinguished its thirst in large horns of hydromel and brandy, and recovered its appetite with delicate slices of raw beef. This is not particularly mentioned by the historian; he only hints at the fact, which, to him, was in no respect extraordinary. His words are that the queen gave to the priests many oxen, sheep, and loaves of bread, much wine and hydromel, and that which makes people drunk (wazayasakara, zaweetu araky), which is *brandy*.

It appears from the annals of this period, that the Kuaragna and the people of Amhara were always at variance. The leader of the Amhariots was Woodage, father of Gusho. Kasmati Eusebius and Eshte, &c. were the most turbulent of the other party. Ras Woodage fought a pitched battle with Eusebius, then Kasmat of Gojam, Tekemt 7251, (1759), in which Woodage was defeated, in consequence of which he lost his province, and was obliged to beg his life of the king and queen at Gondar.

In 7252, the pernicious rise of the Galla at court begins to be apparent. Dule Fasil was, that year, made Tsedjazage, or master of the king's drink, and Lubo, Shalaka of the household Galla. Ras Woodage died Tekemt 27th 7252, and Gusho, his son, was appointed, in Ter following, Kasmati of Gojam.

In Mascarram 7253, (1761), Ayo came from Begemder, and brought along with him his son Ayto Ymariam Barea, who was instantly appointed a Gerasmati. On the 21st of

Tekemt, the queen clothed Ayo magnificently, and gave in marriage to his son her daughter Ozoro Esther. This lady had been taken from Netcho of Tcherkin, on account of some disgust at his character. He rebelled soon after. Eusebius, Gueta, Shalaka Lubo, and all the household forces, were sent to drive him from Tcherkin, which they effected with difficulty.

In Tekemt 7254, Brule, the Galla, was made Shalaka of the Lasta troops in the army. The Abuna John, brought from Egypt in the time of Yasous, died this year. The nation wanted a primate till the year 7262, (1770) when one arrived by way of Jidda, a few months after Mr Bruce entered Habbesh. One Yabo Barea, two years after the death of John, brought a person to Gondar who pretended to have come from Egypt; but he having made an exceptionable profession of his faith, which excited clerical mobs, and much indecent behaviour throughout the kingdom, the court was obliged to banish him and his protectors.

Ter 18th 7255, died Kasmati Waragna of Damo. This man had great influence among his countrymen the Galla; the disturbances which followed his death must be imputed to the rapacity of the Kuaragna, who grasped at his government, and attempted to exclude his son Fasil.

Dulo, governor of Amhara, having been killed, Yacatit 5th 7256, by some Galla, an accident which caused great lamentation in the palace, Lubo was appointed, Masc. 22d 7257. Gusho had the best right to that office, but the Galla were now become obnoxiously powerful.

Michael, Kasmati of Tigre, had for several years before this time been at enmity with Ayo and his son Mariam Barea, because they claimed the government of the district of Lasta, which he had formerly held. Romé and Guigarr, two chiefs of that district, refused to pay their tribute to Michael, but preferred to him the governor of Begemder. Enraged at this desertion, he assembled a large army, and marched towards Lasta, in order to attack Mariam Barea, and to recover the crown of Abyssinia from Guangoul, chief of the Galla of Angot. This last purpose was merely a pretext. The crown had been lost in the

days of Yasous, and had come by accident into the hand of the Galla; but the recovery of it by force was a sufficient pretence for levying an army, and an ostentatious method of gaining the king's favour. The court, at the request of Mariam Barca, sent a message to Michael, "to come no nearer, nor move from his place, but to stay in Enderta, and collect the tribute." Michael replied, that he did not intend to fight, nor cross the Tacazze; pretended to be exceedingly loyal, and took an oath by the arch-angel Michael, that he would keep his word. He marched into Lasta with great pomp, and received the allegiance (for it could be called nothing else) of all the chieftains of that country. It is remarkable, that these are all called hatse, or king; a title which, in the low country, is given to the sovereign alone. Indeed, the king of Lasta, whom Mr Bruce, in the Annals, Vol. V., believes to be the descendant of the ancient family of Zague, seems to have been only one of these petty monarchs, of whom there is a great number. Michael at last approached Begemder, and drove back Wandu Bewu-en, (Powussen), Mariam Barca's fitaurari. They would have come to a pitched battle, if his prudence, and the intreaties of the king's messengers, had not prevailed on Michael to desist for a time. He proceeded on his way south till he arrived in Angot, and received the crown from Guangoul, which he carried to Adowa, the seat of his government, Miazy 7258 (April 1766). He remained in Tigre, perpetually engaged in war with his neighbours, till the 17th Tahsas next year, when the king sent orders to him to come to Gondar. Having arrived at Axum he received further orders to stay till called upon. He did not return to Adowa, but went on a plundering expedition into Serawe.

On the 20th Megabit 7259, died Ras Welledleoul, the queen's brother, and by his death the high offices of Ras and Betwudet became vacant.

In the beginning of the year 7260, the provinces and offices at court were disposed of as follows: Michael Suhul appointed Ras and governor of Tigre, and absolute master of the whole country from Masuah to the borders of Begemder; Lubo, governor of Amhara; Mariam Barca,

Negade-Ras and governor of Begemder; Fasil Waragna, governor of Damot and the Galla; Gusho Ibaba-Azage, Cantiba of Dembea, and governor of Amhara, which last he accepted in place of Lubo, who was made Palambaras; Eusebius, governor of Samen; Eshte, Takakin Billetana gueta; Kasmati Gueta, Betwudet; Engedan, Fecur Gimba Azaje; Hubna Woldo, Fitaraur to the king, &c.

On the 24th Hedar 7260, Michael, being permitted, set out for Gondar with his army, and brought along with him the crown. The Kuaragna, with Eshte at their head, attempted to prevent his entry; but the Galla, who had the ascendant over the king, opposed them, and Michael entered in a more splendid manner than any Abyssinian governor had done before him. He covered the market-place and the entry to the palace with carpets, lavished gold and presents of the most valuable kind on the king and Galla, but neglected the Kuara party. The king was crowned with the utmost magnificence.

Ras Michael arrived on the Angrab on the 23d Tahsas. He kissed the king's hand on the 25th, which was the coronation day. Gueta, with his Kuaragna, attempted to shoot him, but were prevented by the Galla, under Lubo. On the 29th, there was a fray between the Galla and Kuara parties, at midnight. In the morning, the Ras sent his son from the Betwudet's house, who found the Galla all drawn up in arms at Dippebay, ready to fight Eshte, Eusebius, Gueta, and the followers. Michael chid both parties severely. On the 16th of Ter, a series of promotions took place under Michael's influence, in which he was appointed Betwudet. Damot was given to Eshte, and Ibaba to Eusebius with the office of Fitaurari, and both went off to take possession of their places. Lubo and Brule remained at Gondar, the one being Takakin Billetana-gueta, and the other Palambaras. The king, at Michael's request, gave Fasil Waragna his father's lands in Damot; which was so agreeable to the Galla of Maitsha, and so offensive to the Kuaragna, that the Djawa and people of Damot wasted Eshte's lands at Asoa, and Eshte, in return, burnt Fasil's territory as far as Metchakel and the borders of Gojam. Fasil instantly collected his Galla from every quarter, and proceeded towards Dingleber to engage Eshte, who was joined by his brother

Eusebius from Ibaba, and encamped in Goutta. The fatal battle in which Eshte fell, was fought there on the 12th of Megibet 7260. Eusebius, who had been engaged with the Amoro Galla, fled by the way of Dara, and escaped to his own country, where he died of heart-break, and was buried in the church of Mahabar Selasse. Damot and Ibaba were instantly bestowed on Fasil and his dependant Hubna Woldo.

As soon as Mariam Barca heard of the death of Eshte, and the destruction of his friends, he sent a message to Lubo to ask him, why he had bestowed the dignities of Ras and Betwudet on Michael, while he knew that he was at enmity with him. He desired Lubo to depose him, and to assume these offices which better became himself, as he was Ab Negus, or *father* of the king. Michael flew into a passion and demanded, that Mariam Barca should appear instantly to plead his cause before the judges; which that nobleman, after repeated messages, refused to do. Brule was, therefore, proclaimed governor of Begemder, and Mariam Barca a traitor. On the 11th Sene, Brule and the royal army forced Mariam Barca to a battle, in which the new governor and many of his troops fell. The royal army returned to Gondar in a kind of disgrace, and hostilities were suspended till the rainy season was over.

A violent small-pox desolated the country during the rainy season, and for some time after. The great expedition, in which all the forces in the kingdom, except those of Begemder, marched against Mariam Barca, began Tachsas 13th 7261, (December 1768). Fasil and his Galla, along with Lubo, headed their countrymen. They proposed to leave Michael to guard the city; but he replied, "Why should I be left behind; it is my affair likewise." When the army came in sight of Mariam Barca's forces, Michael said to Fasil and Lubo, "Go you, and fight with him." They disputed together who should begin the attack, and shewed symptoms of fear. "Guard you the king then," said the Ras, "I will go foremost, as my custom is." He ordered, at midnight between the 29th and 30th of Tahsas, "his brother's and sister's sons, his boys bred up to victory, who swallowed their enemies like meat," to surprize the pass of Tchetchico, a defile of the utmost importance, be-

tween Begemder and Lasta. Having effected that design, which cut off the retreat of his enemies into the mountains, he made Lubo and his Galla advance against the rebels, as they were now called. Hubna Woldo and his savages were roughly handled; for the unfortunate governor of Begemder fought bravely and with desperation. He was obliged by the royalists to retreat, and several prisoners were taken, among whom was Romé, the chief of Lasta, who had deserted from Michael. A Galla who took him presented him to the Ras; but he exclaimed in a passion, "Why have you brought me that worthless fellow; kill him, cut his throat;" (meter kesado) which the soldier did, and delivered his *shebsheb* to Michael, to be sent to Dippebaye*.

The king continued his march through Begemder, till he came to the celebrated pass. Mariam Barea took refuge among the Galla Wutchilo, and those of Ambaselé in Amhara, by whom he was delivered up to the Ras. The chronicle says, "that Michael would not see his face, because he pitied him, and remembered the scripture, which forbids us to insult those whom the Lord hath delivered into our hand." He sent the prisoner to the king, and refused to sit on his trial, saying, "It is not proper that I pronounce upon him the sentence of death, for we are enemies." But Kasmati Lubo stood before the king in rage, and said, "I judge him with the sentence of death, for my brother Kasmati Brule died without judgment. They pronounced the sentence, and took him out of the tent; and Kasmati Lubo lifted his lance, and pierced him first, and after him all the Galla stabbed him, and butchered him (tabahwo) like an ox, and cut off his head, and brought it to Ras Michael, and threw it down before him as they do spoils; but he did not rejoice at that deed, but said, "Take it out of my sight."

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* The character of Ras Michael, given by Mr Bruce, appears, from the MS. Annals, to be very accurately delineated. He seems to have been cunning, fierce, eloquent, avaricious, and cruel. He bribed the Galla at court, till they united with him in destroying the Kuaragna, and then turned his arms against both. He could speak, when he chose, at great length, and with much ability. In common conversation he was short and sententious. The leading trait in his character was *ferocity*.

Such is the account, given in the chronicle, of this barbarous action. During the delay of the army in Lasta, which had been occasioned by the flight of Mariam Barea, Fasil's Galla had mutinied, and demanded to be sent home to their own country. "Michael, sharp (suhul) of heart as a spear, and sharp of tongue as a knife, said "How shall I return, while the sons of Ayo are kings in Begemder! How can king Joas be the king of other provinces, if those enemies be not destroyed! I will pursue them, and put them under his feet."

The royal army began its march homewards on the 1st of Yacatit. Michael's prowess and abilities as a general were universally applauded, particularly his address in seizing the pass of Tchetchico, which was reckoned impregnable, and had defied the might of many Abyssinian armies. The dislike of the king and his people to Michael had existed during the whole of the campaign, and became evident before they left Begemder. Joas and his Galla entered Gondar on the 20th of Yacatit. The Ras was left behind at a place called Fertsa, not far from Tedda. "The Galla said, 'Let him not enter the town, but go to Tigre.' The king sent Woosheka, one of his servants, to tell the Ras, 'Go to thy country, and do not see my face.' Michael replied, 'They return me evil for good, and hatred for love. I have brought the crown; I have taken Tchetchico, and killed the rebels. Say, go; and I go: cut off my head, and I cut it off.' Without obeying the mandate, he proceeded, on the 22d of Yacatit, to Tedda, where the Acab Saat Abba Salama and the Itchegue met him with orders, not to drink of the Angrab, nor enter the king's camp, but to go to his country. He demanded a trial. The king said, he had no quarrel with him, but that his kindred would not allow him to enter.

Thursday, 24th Yacatit, Michael encamped on Debra Dafitcho, within sight of Gondar. All was in confusion in the town. That night a council was held in the palace, to destroy him if possible. Soon after, the Ras fought his way into the city, and took possession of his house.

A truce was made, for a short time, between him and the Galla. On the 11th Megabit, Lubo left the town for Begemder, his province; and, having arrived at Hegr

Salam, sent a tumultuous message every where to raise troops. Damot and Maitsha rose: The Eleman and Densa Galla rendezvoused at Ibaba: Dara and Begemder assembled in Foggora: Woggora, on the north, rose in Anjaba-meda. The Ras told the king, that his kindred were gathering; "Order them to dismiss, otherwise I will receive them as I can." The king and queen replied, "We are one with thee by oath;" which pleased Michael, as he had no hatred to *them*. The oath was administered by the holiest hermits. The king sent a message to Lubo, ordering him to disband his forces. He answered, "I have no king, but him whom I shall bring down from Wechne." He likewise sent to Fasil, Zugara Confu, and Aclil, but they refused, as did the Kuaragna, contrary to their queen's orders. They joined with the Galla, and, by oath, renounced the blood of their brother Casmati Eshte."

The Galla came in three armies against the Ras, who defeated them totally on the 25th of Miazay, the day after Easter. The measures which he adopted after this victory shall be related in the words of his historian. "At midday Ras Michael blew the trumpet of return, and entered the town by the way of Wanzagué. In those eight days of the passover he held a council, in which he said, "What seemeth good to you in this thing? If we let this king sit upon the throne of the kingdom, the safety of the world, and our own safety, cannot be held in justice and righteousness. His kindred cannot rest till they kill us, and they will not do otherwise. And if we would hinder them, we must kill the king. But the scripture saith, touch not my anointed, and do not lay thy hand on the anointed of the Lord."—And his counsellors said, "Did not we tell thee before, whilst we were in the way, when thou begannest to fight that this king was good for nothing? But when we said, let us make a king, thou always didst deny us in every thing till he came upon thee. Now make a king to us, that shall possess us and the world in justice and righteousness." And, on the 29th on the Saturday, he sent his servants towards Wechne; and, on the 30th Miazay, on Sunday, they brought down Yohannes (John).

"Month of Ginbot. On the first day, he entered Gondar; and the nobles and judges received him, as also the

priests of the hills (hermits and monks) with psalms, and music, and joy, and exultation. And, on the 2d day, he was made king with the crown, as kings are; and the book of his history we will also write, as the Holy Spirit shall direct us. And that king, who was deposed, while he was in the palace by the king's permission, grew a little sick. And, on Sunday 8th, at midnight, died Joas, king of kings.

"We have finished the history of King Yasous, and king Joas, and of the queen Welleta Georgis, by the help of the Lord. Amen, and Amen. So let it be."

In addition to the account which has been given in Vol. II. p. 407, and in other places, of Mr Bruce's Ethiopic MSS. it may be mentioned, that the large volume of the Constitutions of the apostles contains not 300 but 215 folia.

The Coptic MS. on papyrus, purchased by Mr Bruce at Thebes, is certainly not of very great antiquity, though the manufacture of the article on which it is written seems to be now neglected in Egypt.

The Synaxar is a book which answers in the Abyssinian church to the Legenda Sanctorum in the Romish. It was compiled by Abba Michael, bishop of Athrib and Malig, and Abba Johannes, bishop of Brulos, and other holy men of the Alexandrian church. They read their legends on each day, from the beginning of Thoth or Mascaram, till the end of the year, and then arranged them into volumes. Volume first of Mr Bruce's copy contains the legends from Mascaram to the end of Hedar, in 100 folia. Volume II., from Tahsas to Yacatit, 110 folia.

Vol. III. from Megabit to Ginbot 70 folia. Vol. IV. from Sene to the end of Epagomenai, about the same number of folia with the preceding.

The following particulars respecting the price of copying MSS. in Habbesh are extracted from some accounts kept by Balugani at Gondar. Mr Bruce was recommended to one Adigo Aytcho, who lived near the Ras's old house, and called himself a scribe of the law, viz. the Old Testament, &c. The Bible in Mr Bruce's possession was written by different hands. Aytcho seems to have written the Pentateuch. Some of the memoranda are as follows:

Dec. 12. 1770. Weleda Yesous, the younger, has undertaken to write the books of Joshua and Judges, and has received three quires of four leaves each*; and two salts to account of his pay. On the 19th, he has received two salts for a quire of writing. On the 30th, he has received two salts for a quire of writing. On the 8th January, 1771, he has received one blank quire, and two atlas for a quire of writing. The book is finished with four quires, and all is paid.

Weleda Selasse has undertaken to write Jeremiah, December 17, 1770.

He has received two quires of four leaves each, and two salts to accounts of his victual. On the 22d, he has received two salts for a quire of writing. On the 30th, two salts for a quire of writing. On the 9th of January, 1771, he has received a blank quire, and delivered a quire of writing.

This book is finished with four quires and a leaf, and two quires and one leaf remain unpaid for.

Confu has undertaken to write the books of Chronicles, in the Old Testament, December 17; has received four quires of four leaves each, and two salts to account of his diet.

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* It appears that Mr Bruce furnished the parchment, and gave so much money per advance, for the maintenance of the scribe.

The account of Weleda Selasse has been settled as follows; Of thirty seven *brame* (sheets) which Mr Dascalo says he has written, there have been found only thirty-five. But, as the number of letters and lines did not amount to so much, they have been reduced to twenty-eight; so he should have twenty-eight salts, and, for three months victuals, six salts; in all, thirty-four due to Weleda Selasse.

The following extract from an account, addressed to Mr Bruce by Arnaud and Co. of Cairo, Feb. 31, 1776, will give some idea of the price of books and medals in the east.

1773.	*Pat.*	*Med.*
April 28. History of the revolutions of Egypt under the Bashas from A. H. 1099 to 1168, - -	1	45
My 5. Two volumes in fol. History of the conquest of Egypt by the Arabs,	18	0
Third volume of ditto copied, papers, &c. - - -	10	23
June 5. One vol. 4to, History of Antar Ibn Shedad, - -	4	17
22. Two ditto. History of the conquest of Egypt and Syria by Wakedi,	10	45
One, in folio, History of Noureddin and Saladin, - -	13	0
20. One gold medal of Ptolemy XIII, brother of Cleopatra, -	17	0
One ditto of Ptolemy Philopator,	19	22
Aug. 11. One vol. 4to. History of Yemen,	2	45
10. One vol. 4to. Treatise on pilgrimage to Mecca, - -	1	45
One v. 4to. Explanation of dreams by Artemidorus, - -	3	45
31. One gold medal of Ptolemy XI.	18	0
One ditto, Arsinoe of Philopator,	18	8
Sept. 6. Two vol. fol. History of Mahomet,	24	0
17. The Koran, 1 vol. fol. -	15	0

Oct. 8. One vol. fol. Persian Poems of Navesi,	4	0
One vol. 4to. Commentary on the duties of a writer,	2	70
Macrizi's topographical history of Egypt, 3 vol. 4to.	17	0

N. B. The pataka may be rated at from three shillings to three and fourpence. Vide Browne's Travels, p. 57; eighty-five medins make a pataka. The price of a good copy of the Koran, not exceedingly embellished, is therefore about L. 2, 10 *.

Mr Bruce's collection of Arabic MSS. extends to about 70 volumes. The number of works are in all sixty one, some of which are of the best kind, and tolerably known in Europe; others are of less value, and need not be mentioned. A short account of a few of them will suffice in this place.

1. Kitab insani eloyoun fi sirat elamin almamoun; taaliph El Imam Sidi, al Ali Halebi, al Safei. An extensive history of Mahommed, in two vol. folio; excellently written. The author one A i, a native of Aleppo.

2. Moroge addal ab, or the golden meadows, chiefly a history of the Caliphs, &c. by Ali Abu Thassan Al Massodi. 2 vol. folio.

3. Kitab al Rosatin fi akhbar adulatin Al Nouriet wa al Salahiet. History of the reigns of Noureddin and Salaheddin (the celebrated Saladin) by Sheikh Abdulraman Ebn Ismael Ibn Ibrahim Al Shama—an ancient and valuable author—1 vol. fol.

4. Nafkhi el Tabib taalif Sheikh Ahmed Almonkeri al Andulsi, 3 vol. fol. A history of the literature and kingdom of Granada. This work is much embellished with poetry, and is undoubtedly very valuable.

5. Tarikh Ibn Khalican. The biographical dictionary of Ahmed Ibn Mahommed Ibn Khalican Abu Tabbas Shemsaddin, composed partly at Cairo, and partly at Damascus, where he was appointed a cadi, or judge, by Malik Addaher Bibars Mamaluke Sultan of Egypt, A. Hegirae

* The pataka is rated by Mr Bruce, vol. i. p. 119, at five shillings, which is perhaps nearer the truth.

762; about A. D. 1294. This is an excellent work. The MS. is in two vol. folio, and well written, though, in some places, rather carelessly.

6. Kitab elajaieb elmakhaloucat, wagoraieb alwajoudat, taalif Al Sheikh Mahommed Ibn Abdullah el Cazwini.—This is a tolerably well known treatise on natural history, which the Arabs write on the model of Pliny. It is divided into ten parts. In the first, the author treats of celestial things; in the second of the heavens; in the third of time; in the fourth of terrestrial things; in the fifth of the elements; in the sixth of mines; in the seventh of plants; in the eighth of animals and anatomy; in the ninth of strength, and in the tenth of beauty. As the history of Arabic literature and philosophy is not obscure, it is unnecessary to make any observations on the contents of these divisions. This work was composed by Mahommed Abdoullah, a native of Caswin, in Persia, 1 vol. fol.

7. Kitab akhbar el zeman. A treatise on universal history. Most of the Arabic historical books must be called by this title, from the extent of subject which the authors profess to illustrate. They set out from the creation of the world, and run down through what are called in our old histories the four monarchies, till they arrive at the æra of the Apostles. The narrative then becomes interesting and full, because the history of the Chalifs is well known. There are many treatises under the above title; as may be seen in D'Herbelot's Bibliotheque Orientale, and other books on Arabic literature, 8vo.

8. Kitab Kisseh fatouah al Yemen taaliph al Sheikh Abou l' hassan al Bekri. History of the conquest of Yemen, or Arabia Felix, by Abou l'hassan al Bekri. This work contains several curious particulars relative to the ancient history of Yemen. It is in one vol. 8vo.

9. Kitab akhbar el awal fi man tassarapha fi Messir min addoulla tolfat el Cholafa; taalif Mahommed Ibn Abdul rnaatei Ibn Abu l' Kotha al Menoufi. A history of Egypt under the Chalifs, one vol. 8vo.

10. Jagraphieh tarikh Adulla Al Mamoun Ibn Haroun el Rashidi. This MS. contains a description of the earth on the plan of Ptolemy; and in the course of it,

many curious particulars respecting Soudan and other places in Africa. Though the Arabian geographers are of all writers the greatest plagiarists, they frequently give useful notices, and their writings deserve to be better known. All their works have a resemblance to one another: the scientific part is closely copied from Ptolemy. In their accounts of remote countries they often give fabulous reports which had been current in the east long before their time, mixed with the information derived from travellers. One of the best Arabic writers on geography is Edrisi, an abridgement of whose work is known in Europe, and a part of which has been illustrated in a learned and careful manner by professor Hartmann of Gottingen. There are some geographical writers quoted by Edrisi, whose works are probably still extant, and merit the attention of the learned, as being the sources of his information, and part of the chain which connects Grecian and Arabic literature. The abovementioned MS. is carelessly written on bad paper. It is a small quarto.

11. Kharidat al ajaieb wa feridat al goraieb, taalif Al Sheik Al Nasih Al Maliki. A work on the plan of No. 6. of this account. It contains many particulars in geography: one vol. 8vo.

12. Kitab al Rozat fi Tarikh Geziret Messir. A history of Egypt in one vol. 8vo.

13. Kitab Coccub al Rozat, taalif Sheikh Gelaleddin Abu Fadl Abdulrahman Al Soiuti, one vol. fol. This is an account of Egypt and the Nile, compiled from Edrisi, Hassan el Mondar, Abulfeda, el Tiphasi, and, in short, from all the Arabic geographers and poets, who wrote on that subject before the author. His work is a perpetual series of quotations, many of which are very curious.—Some account of this and of Gelaleddin's other writings may be seen in D'Herbelot's Biblioth. Orient. In this MS. is a plan of the Nile issuing from Jibbel el Kumr, and flowing into the salt sea, or Mediterranean. It is an exceedingly rude performance. The four rivers run on each side down from the mountain, without any meander in their course till they reach the lake under the equator; and thence the illuminated stream is conducted to the foot of the

page, without any regard to proportion, or probability. It is drawn after the description in Edrisi, or perhaps in some older writer; and is a miserable proof of the low state of geographical knowledge in the east. The stories concerning the temple of Idris, or Enoch, situated on one of the mountains of the moon, and of the statue of the man, who was transformed for his impiety, along with the other Egyptian fables respecting the sources of the Nile, seem to be told more circumstantially by this author than by Edrisi.

14. Nesib al Koreishi, taalif Abu l'Abbas Ibn al Malik al Jahed. A history of the tribe of Koreish, and of the actions of the prophet. This is a thin vol. in 8vo. Bound up with it are a few pages which Mr Bruce got at Sennaar from Ahmed Sid el Koom, containing the names of the Funge kings, with an account of the length of their reigns, from Amru Ibn Adelan to Ismail who was king in 1772. It is what he calls "the hangman's roll," Vol. VI. p. 380; and of which he gives a translation.— Ib. p. 384.

15. Kheridat al ajaieb wa feridat al goraieb, taalif Zeineddin Omar Ibn al Wardi. This is a very useful geographical work of which we have an account by De Guignes, in Vol. II. p. 19—60 of Notices et Extraits des MSS. de la Bibliotheque Royale. Paris, 1787. This MS. is in vol. 8vo.

16. Kitab alwaad walitibar fi dhakr il Khatat walathar. A topographical history of Egypt in three vols. small 8vo, by Takioudin Ahmed Ibn Ali el Makrizi. This author wrote several excellent works, all of which deserve to be better known. Maillet made much use of this topographical history in his description of Egypt, which indeed he might have composed without having been in that country. The MS. is elegantly written, though, in some places, carelessly.

17. Phatuhat Al Sham wa Messir wageiroha taalif Abu Abdullah Ibn Ahmed Al Wak di, two vols. small quarto. This is a very excellent history of the Revolutions of Syria and Egypt under the Mahommedans.

18. Husn atmohtassera fi akhbar Messir al Kahira, taa-

lif al Shekh Gellaleddin Al Soiuti. An abridged history of Egypt by Al Soiuti. one vol. 8vo.

19. Sherah Hatabat' adabe el Kateb, taalif Ibn Cotba. A treatise on the duties of a writer, by Ibn Cotba. This is a very amusing work. The MS. is finely written, and very elegant; it is in large 8vo.

20. Sirat Antar Ibn Shedad. The life of Antar Ibn Shedad. A romance. Beautifully written in one thick volume octavo, and curious.

21. Khabr Jalaad Melec el Hind wa Wazir Samish el Hakim. History of Jalaad, king of India, and the Visir Samish el Hakim, a romance, written on vellum, one vol. fol.

22. Diwane Sebt al Tawidi. A collection of panegyrics, poems, &c. one vol. large 8vo.

These are the titles of some of the principal historical and geographical works in Mr Bruce's collection; but there are in it many other small treatises on the history of Egypt and Syria; such as the life of Sultan Addaher Bibars; the expedition of Sultan Selim against Khansu el Ghuri; the siege of Bahnesa (a fabulous history); chronicle of the chalifs by el Cazani; history of the Pashas in Egypt from A. H. 1099 to A. H. 1161; History of the four first caliphs, &c. &c.; and a great number of medical works, by Mousa el tebib, Haroun el Ishraeli Ibn Aws Ibn Hakim el Monteb, Ibn Shebin al Cadruni, al Maliki, &c. in many volumes, a description of which is unnecessary in this place.

Considering the value of an acquaintance with oriental literature, in all investigations, which are intended to examine, or illustrate, the principles of revealed religion, and the tendency of that literature to promote our knowledge of a very extensive and interesting portion of the globe, not to mention the advancement of our political interests in India, it is to be regretted, that the study of that branch of learning is, in this country, neither cultivated nor encouraged. Perhaps theologians may think, that the church is secure on the basis of what has been already done; and that a general neglect, not to say ignorance, of the language of the sacred books

may be excused, as the industry of former times has enabled us to know, in general, what they contain. This security is not prudent. The great scholars of the sixteenth and seventeenth centuries had not the same advantages in criticism and philosophy which we possess. They ascertained what was truth as far as they were able; but it cannot be supposed, that a work, which is progressive, could be finished at once. Considerable pains have, indeed, been taken, to procure, by collation, an accurate copy of the Old Testament; but it is astonishing to see how little knowledge of the oriental languages LOWTH, and the other translators of particular books, have shewn in their different works. The island is disgraced by a number of dull Hebrew grammars and dictionaries, written by such scholiasts as Parkhurst, Bate, &c. who pretend to settle the meaning of words, and, at the same time, have neither good sense and judgment to investigate, nor learning to discover the objects of their research. By maintaining that the Hebrew language exists only in the Bible, and by thus detaching it from the Arabic, and other related dialects, they assume a liberty of giving any form and meaning to the words, which they think most plausible. Yet the grammar and prosody of the Jewish language might easily be traced from these kindred sources. On the other hand, if infidels should attack the sacred books in the present state of Hebrew philology, it is certain, that they might gain a greater advantage, than, on a first view of the subject, most divines may apprehend, and a support to their arguments, which it would require some time to remove. The literature of Jones, and the wit and intentions of Voltaire, united, would do more harm than all the philosophical scepticism in the world.

CHRONOLOGICAL TABLE

OF THE

KINGS OF ABYSSINIA.

The Abyssinian chronicles usually begin with lists of the kings of Ethiopia from Ibni Hakim the son of Solomon, to Icon Amlac, the first prince concerning whom there is any historical detail. I shall insert here one of these lists, but must premise, 1. That they all seem to have been composed after the Mahometan invasion by Gragnè, from materials of a very slender description. 2. That it is not certain that the history of each king was written during former ages with the same attention as in later times. 3. That in the lists the names of eminent or remarkable princes alone seem to be recorded. 4. That the Abyssinians, being undoubtedly a colony of Arabs from Hamyar or Yemen, can have no just pretensions to any affinity with the Jews. This fact rests on the authority of their language, which is an old dialect of the Arabic, and on certain intimations in antient history.

The time at which the Arabian colony settled in Abyssinia is totally unknown. We are led to believe that it was before the end of the Greek kingdom of Egypt, by some slight probabilities rather than by any historical evidence. There is reason to suppose that the colony landed at Zeilà or at Adulis, that is at Masuah, and took pos-

session of the district now called Tigrè, in which it built Axum. The countries of Samen, Sire, Dembea, Agowmidré, &c. &c. were peopled by nations of a different race, and of different languages. These the Arabic colony slowly conquered and reduced. The native race of Dembea are now called Falasha. They were Pagans till lately.

The Arabs also early obtained a settlement in Amhara, an inland district on the river Abai. The colony indeed seems to have separated from its parents the Hamyarite Arabs, and to have gone in quest of new territories up the western side of the Arabian Gulf.

The kings of Axum aspired to an intercourse with the Egyptian Greeks, and many of their inscriptions were written in the Greek language. The first account we have of these sovereigns is in a narrative of a periplus of the Red Sea, written it is uncertain by whom, and at what time, but, according to the general opinion, during the conjunct reigns of the Emperors Marcus and Verus. Having described the country about Adulis, the author of the narrative begins to speak of the inland territory, and says, "Zoscales is sovereign of these parts, from the country of the Moschophagi to the limit of the barbarous country on the other side; a man correct in morals, excelling the greater part of men, brave also, and skilled in the Greek language." Arriani Peripl. Mar. Erythr. pag. 4. apud Hudsoni Geo. Vet. Scriptores Min. Vol. I.

At that time the Axumites must have enjoyed a lucrative trade with the Egyptians.

The next historical notice concerning them is their conversion to Christianity by one Frumentius, or, as they now call him, Abba Salāma. The following is the list of their monarchs given by the Abyssinians themselves.

The first king of Ethiopia was Arwé or the Serpent. He reigned 400 years. He was slain by Za Bcesi Angâba, who reigned 200. Their successors were Zagdur, who reigned 100. Zasebass Besedō 50. Zakawasya b'Axûm 1. Za-Makeda 50. In the fourth year of the reign of Solomon she went to Jerusalem. After her return she reigned 25 years. Ibnĕ Hakim, or Waréza (the youth) reigned 29 years. Then Za-Hendedyu reigned 1. Awda 11

Za-awsyu 3. Za-tsawe 31. Zagesyu, half a day. Za-maute 8 y. 4 mo. Za-bahse 9. Kāwuda 2. Kanazi 10. Haduna 9. Za-Wazih 1. Zahdir 2. Za-calésa 6. Zastayū 16. Zalalya 26. Zaaglebu 3. Za-awsena 1. Za-Berawas 29. Za-Mahasi 1. Zabaesi Bāzen 16. In his 8th year Christ appeared. And their years are 1098.

This list varies from one often found in their chronicles, in which the names run as follows, but there are no periods assigned for each reign: Ibni Hakim begot Tomai, then from father to son, Tomai; Zagdur; Acsûmai; Tahawasya; Abralius; Warada Tsai; Handor; Warad Nagâsh; Ausanya; Elaleor; Toma Sion; Basileus or Basilius; Autet; Zawarc nebret; Seifi; Ramhi; Hartsé; Saphelia; Agbul, Bawâul; Bawaris or Bawris; Mahassé; Naqué; Bazén, in his days the Lord Jesus Christ was born, to him be praise.

The other list proceeds Bazen reigned 16 years. Za-Senatu 26. Zales 10. Zamasenh 6. Za-sutuwa 9. Za-adgaba 10 years and 6 months. Za-agba 6 months. Za-malis 6 years. Za-hakale 13. Zademahé 10. Za-awtet 2. Za-elawda 30. Za-zigen and Za-réma 40. Zagafalé 1. Za-baesi-serk 4. Za-elazguagua 76. El-herka 21. Za-baezi tsawesa 1. Zawakena 2 days. Za hadûs 4 months. El-segel 2 years.. El-asfah 14. El-tsegába 23. Ej-semera 3. El-aiba 16. El iskandi 36. El-tshemo 9. El-sam 13. El-aiga 18. El-amîda 40 years and 8 months. Elahyawa 3. El-abreha and Elatsebha, whose title was Agwala Anbasa, children of the lion. They reigned 26 years and 6 months. In their 13th year came Christianity to Axum.

The authenticity of these lists is extremely to be suspected. The kings from Arwé to Makeda, and from her to Abraha and Atsbeha, have names of which very few are either Ethiopic or Arabic. They seem to have been invented in the reign of Melec Segued, who built Axum after it had been ruined by Gragné.

"While (says the Chronicle) they (Abreha and Atsebha) "were in Axum, Christianity came into the country. In "those days there were no *abominable* Turks. The father "of Abba Sâlama was a merchant; for Abba Salâma "came with his father to the people of Ethiopia, of whom "there were some that worshipped the serpent (Arwé), and

" others were under the rule of the law (Jews). And then " he taught them the gospel of Jesus Christ; and he did " miracles before them; and they believed and were bap- " tised with Christian baptism. This was from the birth " of Christ in the 330th year *. And Abreha and Atsbeha " built Axum."

This conversion which, for many reasons, must have been very limited, was countenanced by Athanasius the archbishop of Alexandria; and Frumentius is said to have been consecrated by him Abuna, or primate of the Ethiopic church. The emperor Constantine, a well-known enemy to the Arians, died in May 338. His sons, who were Arians, dispatched letters to Aeizanas and Saiazanas, princes of Axum, advising them to disgrace Frumentius and profess Arian Christianity. What kind of Christians these princes were, is not so certain. Mr Salt lately found at Axum, a very curious inscription placed there by order of Aeizanas, to record one of his expeditions against the wild people on the frontiers of his kingdom. His titles, the list of his dominions, and the character of his warfare, are all very interesting. But nothing is more so than the fact that he was not a Christian; for at the close of the inscription he calls himself the son of Arés, or Mars, and declares that he erects to that deity several statutes in return for victory †.

Perhaps Abreha and Atsbeha might have been Christians. While only a small part of the nation was converted, Paganism would neither be a cause of dispute on the throne, nor in the community.

It is to some of the princes who lived between this time and the year 535, that the Adulic monument owes its existence. It was a thought worthy of Cosmas, to ascribe such a narrative to the Ptolemies.

We hear no more of Abyssinia in the Greek histories, till A. D. 511, which seems to have been the era of Caleb's expedition into Yemen for the sake of relieving the Arabic Christians, then persecuted by Du-Nawas, a Jewish prince.

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* N. B. One copy asserts that the conversion was in the year 333.

† It begins with the names of three brothers, Aeizanas, Saiazanas, and Adiphas—true Ethiopic names.

About 25 years after that expedition, Cosmas the monk and merchant was at Axum. He calls the king Ελλατξβης which is Elatsbeha.

The natives chronicles relate as follows: "Abreha begat (they are all in lineal succession) Asfah, Arfad, Amosi, Eladōba, or Seladóba: (this resembles the Αδηφας of the Axum inscription.) Seladoba begat El-améda. In his reign came nine saints, or holy men, from Greece and Egypt, and settled the faith: Abba Alef, Abba Tschama, Abba Aragâi, Abba Afatsé, Abba Garima, Abba Pantaleon, Abba Licianos, Abba Gubá, Abba Yemata. The next king Tāzéna,—then Caleb: he renounced the world, and became a monk in the monastery of St Pantaleon. Caleb begot Guebra Mascal, in whose reign Yaréd composed the book of hymns called Dugwá, and he built D.-ma. (This book, a very large volume, Mr Salt brought from Abyssinia). This king was succeeded by his son Constantinos, or Constantinus—Wesen Segued—Fré Sanai—Aduraz—Akul Wudem—Germa Sefer—Zirgazi—Degna Michael—Baher Akela—Gouma—Asgomgc am—Letum Tālatem—Ad-gosh—Aizur, who reigned half a-day, and died in the alcove while all the people of the camp were successively kissing his hand. And many of the people died with him in Tchenkel. And from that time began the guarding of the people by force from the king's presence. His son was Wudem Asferé, whose days were 150 years. Armah; Degna Jin; Guda Zin; Delnaad. After him the kingdom was torn asunder and given to others that were not of Israel; these were Zagué; that race reigned, according to some MSS., 330, according to others 354 years.

The reigns of the kings in the above list are not stated Using 330 as the total duration, the house of Zagué must have usurped the throne about A. D. 938. This event is recorded differently.

"In those days arose a wicked woman called Asâto, in Amhara and Goudit, in Tigré, who polluted and destroyed the churches for forty years. After her (before the schism) were Anbasa Wudem; Acuala Wudem; Germa Asfaré; Zargazi; Degna Michael; Bedagzi Armah. After him the kingdom was rent asunder, the priesthood was divided,

and the power given to those that were not of the race of David; as the Lord said, I will provoke you to jealousy by them that are not a people. (The names of the Zagué kings are then given, but not so many of them as in the other lists.)

The other lists give the names and reigns of the Zagué kings as follows: Teclahaimanout 3. Totodem 40. Zan Shum 40. Germa Shum 40. Imherân 40. Kedus Harbé 40. Nacuta-laab 48. Itebarak 40. Meirari 15. Harbe 8. It is too evident that the periods of the reigns are fictitious, from the recurrence of the number 40.

The line of the old monarchs took refuge in Shoa and Amhara. An Abuna called Tecla-Haimanout, entered into a kind of agreement with Icon Amlac, one of the Shoa kings, that he would, by his influence, put him in possession of the dominions of the Zagué, in return for which he demanded great endowments and immunities for the church. These demands were complied with, and Icon Amlac recovered the whole kingdom in the Abyssinian year 6762, or A. D. 1268. From his time we have more authentic lists of the sovereigns, and of the duration of their reigns.

Icon Amlac reigned 15 years.
Igab Sion, his son, reigned 9 years.
His five children reigned 5 years; two of them reigned three and three of them two years.
Wudem Araad reigned 15 years.
Amda Sion reigned 30 yaers.
Seif Araad reigned 28 years.
Wudem Asferé reigned 10 years.
David, second son to Seif Araad, reigned 29 years; killed on the 9th Tekemt.
Theodorus, his eldest son, died on the 29th Sené; his reign was three years.
Isaac, another son of David, reigned 15 years.
His son Andreas, an infant, reigned 6 months.
Hazeb Nanya reigned 4 years.
Meherek Nanya, his son, reigned 4 months.
Bedel Nanya reigned 8 months.
Zera Jacob, or Constantinos, fourth son of David, reigned 34 years and 2 months; died on the 3d day of the Epagomenai, Abyss. year 6960.
Beda Mariam died 12th Hedar 6971.

Iscander, died 12th Ginbot 6986.
His child, who was raised to the throne, died in Hedar or Tahsas 6987.
Naod died, 6th Nahasé, 7000.
David ascended the throne at that date.
The Portuguese embassy entered Abyssinia in 1620, or the Abyssinian year 7012, and did not leave it till 1626.
David after numerous misfortunes, and after seeing the total destruction of his country by Gragné, died 5th Mascaram, 7033
Claudius fell in Adel, Megabit 26th 7051.
Menas died 7th Yacâtit 7055
Melec Segued, died beyond the Nile, 7089
Jacob his son fell at Lebart, 4th Megabit 7099.
Susneus, died 10th Mascaram, 7124.
Fasil died 3d Tekemt 7160.
Hannes died 15th Hamlie 7175.
Yasous the great was murdered 5th Tekemt 7199,—October 2d 1706.—Six years after Poncet had been in Abyssinia.
Tecla-haimânout his son, was assassinated 25th Sené, 7200
Tiflis died 5th Tekemt 7204.
Oustas died 16th Yacatit 7208.
David died 8th Ginbot 7213, May 3d 1721.
Bacuffa died 11th Mascaram 7223, September 1730.
Yasous II. died 21st Sené 7237—June 1745
Yoas was murdered 8th Ginbot 7261—1769

Our latter information is from Mr Salt's journal, and some notes on a kalendar that he brought from Abyssinia. Hannes reigned five months. His son Teclahaimanout eight years. In 1777 or 1778, he was deposed, and Solomon his son, a child, elected. He reigned two years. Tecla Georgis, brother to Teclahaimanout succeeded to him, and reigned five years. He was deposed, and one Yasou consecrated, who reigned four years, and died of the small-pox, about the year 1787. In the kalendar Negus Tecla-haimanout, is named opposite to the year 1788; but on the other side opposite to the year answering to 1788-9; we find Hizkias reigned in Hamlie, that is, Hiskias was made king in July 1789. He reigned six years, though we see Negus Tecla on the opposite side, alluding to the king sup-

ported by the governor of Tigré. Opposite to 1796 and 1797, we have Baeda Mariam. He reigned two years; then opposite to 1798, Yunus, he reigned only three months. On the contrary side, we have the kings supported by the governor of Tigré; Negus Solomon, and Negus Tecla-Negus. Adimo and Negus Solomon are both named opposite the year 1798-9. Adimo reigned two years. In 1800 or 1801, Ayto Gualâ Sion, a son of Hizkias, was raised to the throne, which he has held ever since.

The Abyssinian year 7305 answers to the year from the 29th of August O. S. 1812, till the 29th August 1813. To find the common year, 5500 must be subtracted from 7305. To the remainder, 1805, add 7, if the fact occuring in that year have happened on any day before the 6th of Ter, their fifth month. The 6th Ter corresponds to the first day of our January O. S After this date, 8 must be added; and the years will respectively be 1812 and 1813.

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* The Ethiopic months are Mascaram, Tekemt, Hedar, Tahsas, Ter, Yacatit, Megabit, Miazay, Ginbot, Sené, Hamlé, Nahassé. The first day of Mascaram, or of their first month, is the 29th of August. Each month has 30 days, and there are five called Pagomen, added to Nahassé to complete 365 days.

To turn Ethiopic years into European, subtract 5500 from the Ethiopic year, and if the time of the year be before Ter or January 7; but if after that, 8 must be added to the remainder, which gives the common year.

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